Ambient Air Monitoring Plan

2012

Chattanooga/Hamilton County Air Pollution Control Bureau
Knox County Health Department, Department of Air Quality Management
Memphis/Shelby County Health Department, Air Pollution Control Program
Metropolitan Health Department, Division of Air Pollution Control
Tennessee Dept. of Environment and Conservation, Air Pollution Control Division

Final June 15, 2012

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Introduction to the 2012 Ambient Air Monitoring Plan for Tennessee

The State of Tennessee is required to evaluate the ambient air monitoring network each year in accordance with the requirements specified in 40 CFR Subpart B 58.10. The requirements that must be met in the annual evaluation are included as follows:

§ 58.10 Annual monitoring network plan and periodic network assessment.

(a)

(1) Beginning July 1, 2007, the State, or where applicable local, agency shall adopt and submit to the Regional Administrator an annual monitoring network plan which shall provide for the establishment and maintenance of an air quality surveillance system that consists of a network of SLAMS monitoring stations including FRM, FEM, and ARM monitors that are part of SLAMS, NCore stations, STN stations, State speciation stations, SPM stations, and/or, in serious, severe and extreme ozone nonattainment areas, PAMS stations, and SPM monitoring stations. The plan shall include a statement of purposes for each monitor and evidence that siting and operation of each monitor meets the requirements of appendices A, C, D, and E of this part, where applicable. The annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to EPA.

(2) Any annual monitoring network plan that proposes SLAMS network modifications including new monitoring sites is subject to the approval of the EPA Regional Administrator, who shall provide opportunity for public comment and shall approve or disapprove the plan and schedule within 120 days. If the State or local agency has already provided a public comment opportunity on its plan and has made no changes subsequent to that comment opportunity, and has submitted the received comments together with the plan, the Regional Administrator is not required to provide a separate opportunity for comment.

(3) The plan for establishing required NCore multi-pollutant stations shall be submitted to the Administrator not later than July 1, 2009. The plan shall provide for all required stations to be operational by January 1, 2011.

(4) A plan for establishing Pb monitoring sites in accordance with the requirements of appendix D to this part shall be submitted to the EPA Regional Administrator no later than July 1, 2009 as part of the annual network plan required in paragraph (a)(1) of this section. The plan shall provide for the required source-oriented Pb monitoring sites to be operational by January 1, 2010, and for all required non-source-oriented Pb monitoring sites to be operational by January 1, 2011. Specific site locations for the sites to be operational by January 1, 2011 are not required as part of the July 1, 2009 annual network plan, but shall be included in the annual network plan due to be submitted to the EPA Regional Administrator on July 1, 2010.

(5) A plan for establishing NO2 monitoring sites in accordance with the requirements of appendix D to this part shall be submitted to the Administrator by July 1, 2012. The plan shall provide for all required monitoring stations to be operational by January 1, 2013.

(6) A plan for establishing SO2 monitoring sites in accordance with the requirements of appendix D to this part shall be submitted to the EPA Regional Administrator by July 1, 2011 as part of the annual network plan required in paragraph (a) (1). The plan shall provide for all required SO2 monitoring sites to be operational by January 1, 2013.

(b) The annual monitoring network plan must contain the following information for each existing and proposed site:

(1) The AQS site identification number.

(2) The location, including street address and geographical coordinates.

(3) The sampling and analysis method(s) for each measured parameter.

(4) The operating schedules for each monitor.

(5) Any proposals to remove or move a monitoring station within a period of 18 months following plan submittal.

(6) The monitoring objective and spatial scale of representativeness for each monitor as defined in appendix D to this part.

(7) The identification of any sites that are suitable and sites that are not suitable for comparison against the annual PM2.5 NAAQS as described in § 58.30.

(8) The MSA, CBSA, CSA or other area represented by the monitor.
(9) The designation of any Pb monitors as either source-oriented or non source- oriented according to Appendix D to 40 CFR part 58.
(10) Any source-oriented monitors for which a waiver has been requested or granted by the EPA Regional Administrator as allowed for under paragraph 4.5(a)(ii) of Appendix D to 40 CFR part 58.
(11) Any source-oriented or non source- oriented site for which a waiver has been requested or granted by the EPA Regional Administrator for the use of Pb-PM10 monitoring in lieu of Pb-TSP monitoring as allowed for under paragraph 2.10 of Appendix C to 40 CFR part 58.
(12) The identification of required NO2 monitors as either near-road or area-wide sites in accordance with appendix D, section 4.3 of this part.

(c) The annual monitoring network plan must document how States and local agencies provide for the review of changes to a PM2.5 monitoring network that impact the location of a violating PM2.5 monitor or the creation/change to a community monitoring zone, including a description of the proposed use of spatial averaging for purposes of making comparisons to the annual PM2.5 NAAQS as set forth in appendix N to part 50 of this chapter. The affected State or local agency must document the process for obtaining public comment and include any comments received through the public notification process within their submitted plan.

(d) The State, or where applicable local, agency shall perform and submit to the EPA Regional Administrator an assessment of the air quality surveillance system every 5 years to determine, at a minimum, if the network meets the monitoring objectives defined in appendix D to this part, whether new sites are needed, whether existing sites are no longer needed and can be terminated, and whether new technologies are appropriate for incorporation into the ambient air monitoring network. The network assessment must consider the ability of existing and proposed sites to support air quality characterization for areas with relatively high populations of susceptible individuals (e.g., children with asthma), and, for any sites that are being proposed for discontinuance, the effect on data users other than the agency itself, such as nearby States and Tribes or health effects studies. For PM2.5, the assessment also must identify needed changes to population-oriented sites. The State, or where applicable local, agency must submit a copy of this 5- year assessment, along with a revised annual network plan, to the Regional Administrator. The first assessment is due July 1, 2010.

(e) All proposed additions and discontinuations of SLAMS monitors in annual monitoring network plans and periodic network assessments are subject to approval according to § 58.14. [71 FR 61298, Oct. 17, 2006, as amended at 72 FR 32210, June 12, 2007; 73 FR 67059, Nov. 12, 2008; 73 FR 77517, Dec. 19, 2008; 75 FR 6534, Feb. 9, 2010]

The draft plan that is presented in the following pages will address each of the requirements specified in the CFR. An overview of the geography, general climate, wind patterns and population trends are included to provide background information that will assist the reader in understanding the current air monitoring network and reasons for placement of the existing monitoring sites. The actual regulatory requirements that specify the number and placement of air monitoring sites is found in 40 CFR 58. The sections that provide this guidance are also included in the report as a reference to help better understand the actual monitoring needs in a given area.

In many instances, the "areas" for which monitoring is required are based on population criteria in which population must be considered to allow for monitoring in the areas where populations may be affected or exposed to the various criteria pollutants of concern. Additional monitoring sites are needed to address areas where source related emission density may be elevated and also impact communities in the same area. Other considerations must also be addressed when selecting and operating air monitoring sites. The local influences of some types of sources (roadway dust or emissions) may be factors that require monitoring sites to be spaced certain distances from those sources or in the case or near-road or roadway monitoring activities, the monitors must be located very close to the potential sources of mobile emissions.

The principal areas in Tennessee with air monitoring sites are depicted with a graphic showing the locations for each of the monitoring sites. The sites are further identified with a site number, an Air Quality Site Identification (AQSID) and the types of pollutants being monitored for at each location. Tables containing the relevant information for each site are also included. The tables are provided in two sections following the location graphic and have been

condensed and combined from the previous year's format so that all relevant information can be found within each area's section of the report and relieves the reader from searching tables at the end of the report for information about a given site.

Each of the four local programs operating an air monitoring network in Tennessee has also provided a separate annual review which has been included in this report. Where revisions were noted in the local networks, similar revisions were added to the state's overall plan.

The recent changes in the NAAQS (National Ambient Air Quality Standards) have resulted in a need to evaluate additional air monitoring in order to comply with the new standards. In some cases; (SO2and NO2), the revisions to the standard were augmented with revisions to the monitoring requirements. Some of the necessary changes to the monitoring networks have been completed while others are being planned for implementation.

Proposed Revisions to Tennessee's Ambient Air Monitoring Network

Sulfur Dioxide Monitoring:

Based on historical ambient SO_2 data generated in the Kingsport area of Sullivan County, a monitoring site is required in the vicinity of Eastman Chemical Company to assess compliance with the hourly National Ambient Air Quality Standard (NAAQS). A site is already in operation in Kingsport which meets all requirements of 40 CFR, Part 58. It is identified in AQS as 47-163-0007. The site is operated by Eastman Chemical Company and is required under Chapter 1200-03014-.01 of the Tennessee Air Pollution Control regulations. Tennessee Air Pollution Control (TAPC) requests EPA consider this site to meet the SO_2 monitoring requirement in Kingsport.

Based on population-weighted emission index calculations, a single SO_2 monitoring site is required in the Core-Based Statistical Areas (CBSA) of Memphis, Nashville, and Knoxville. SO_2 monitoring sites are already in operation in Memphis (AQS 47-157-0075) and Nashville (AQS 47-037-0011) which should satisfy this requirement. To meet the requirement in Knoxville, TAPC proposes to locate an SO_2 monitor at its existing ozone monitoring site (47-001-0101 in Anderson County which is in the Knoxville CBSA.

Memphis-Shelby County Air Pollution Control proposes to discontinue sulfur dioxide monitoring at the Fite Road site (AQS 47-157-0046). This monitor began operation May 1, 1994 with the primary objective of monitoring maximum SO_2 concentrations from nearby sources. Since the installation of the site, sources in the area have reduced sulfur dioxide emissions significantly. The primary source in the area has reduced SO_2 emissions 90 percent since 2005. Ambient SO_2 concentrations recorded at the monitoring site in recent years are only a fraction of the NAAQS. Discontinuance of this monitor would allow better utilization of resources.

A second SO_2 monitoring site is operated in Shelby County (AQS 47-157-0075) as indicated above. Continued operation of this site allows Memphis-Shelby County Air Pollution Control to meet minimum SO_2 monitoring requirements in the Memphis CBSA.

PM-2.5 Monitoring:

TAPC supplemented fine particulate monitoring at its Clarksville site (AQS 47-125-1009) in January 2007 by adding a speciation monitor. The purpose was to assess the makeup of fine particulate at this location. Sufficient data has now been collected and the intended purpose of operating a speciation monitor at this location has been met. Therefore, the speciation monitor at this location will be shut down December 31, 2012. Mass concentrations of PM-2.5 will still be monitored at this site with both a reference monitor and a continuous monitor.

PM-10 Monitoring:

TAPC proposes to discontinue PM-10 monitoring at its Cleveland site (AQS 47-011-1002). This site has been in operation since 1972. It is felt it is no longer necessary to operate this site because ambient data generated in recent years at this location reveals PM-10 concentrations are very low in relation to the standard. Summary statistics for the past five years for this site are as follows:

Year	1st Max 24-Hr ($\mu g/m^3$)	AAM ($\mu g/m^3$)
2011	43	19.2
2010	53	22.0
2009	29	17.8
2008	39	20.0
2007	50	23.9

PM-10 monitoring was discontinued March 2012 at site (AQS 47-037-0002) in Davidson County at the request of the property owner on which the site is located. The building on which the PM-10 monitor was located is undergoing renovation. The renovation is scheduled to be completed in June 2012 at which time the Nashville-Davidson County Air Pollution Control program plans to restart the PM-10 monitor.

Memphis-Shelby County Air Pollution Control proposes to discontinue PM-10 monitoring at its Fite Road site, (AQS 47-157-0046). Historical data for this site reveal PM-10 concentrations are very low. The area in which this site is located is prone to flooding which sometimes interferes with access to the site. To meet minimum PM-10 monitoring requirements in the Memphis CBSA, Memphis proposes either it's Alabama Avenue site (AQS 47-157-0024), Frayser Road, (AQS 47-157-021), or Edmund Orgill Park (AQS 47-157-1004) be considered as an alternative to continued monitoring at the Fite Road location.

Ozone Monitoring:

TAPC and the Nashville Air Pollution Control program operate seven ozone monitoring sites in the Nashville CBSA. Three of these sites, (AQS 47-037-0011), (AQS 47-037-0026) and (AQS 47-165-0007) have been in operation since the 1970's. The remaining four sites were established in the late 1980's and early 1990's, just prior to or during the Nashville Southern Oxidants Study (SOS), to gain a better understanding of ozone formation and transport in the Nashville CBSA.

The additional sites established for the SOS study have served their purpose. While two of the sites, (AQS 47-187-0106) and (AQS 47-189-0103), still provide useful information in monitoring the ozone situation in the Nashville CBSA, the two remaining sites (AQS 47-165-0101) and (AQS 47-149-0101), are no longer needed. TAPC proposes to discontinue these two ozone monitoring sites to conserve resources for other critical monitoring tasks. This proposal is in line with EPA's request for state and local agencies to review monitoring networks and make adjustments where possible to be more efficient in use of resources and to be able to accommodate new monitoring requirements.

The Chattanooga-Hamilton County Air Pollution Control agency proposes to relocate the ambient ozone monitoring site located at the Eastside Utility District (AQS 47-065-4003). Access to the current site has become a problem due to increased security measures put into place by the utility district. Routine access to the site must be granted by a security guard. This presents problems when the site operator needs immediate access to the site to repair malfunctioning equipment.

A second reason for relocating this site is because the water plant at Eastside is currently undergoing expansion and is no longer a suitable location to monitor for ozone in this area.

Nitrogen Dioxide Monitoring:

Community Wide Monitors

Revisions to the NO_2 NAAQS in 2010 require a minimum of one NO_2 monitoring site in any urban area with a population greater than or equal to one million people to assess community-wide concentrations. Therefore, a community-wide site is required in the Memphis and Nashville CBSA's. An NO_2 monitoring site that meets the requirements is already in operation in Nashville (AQS 47-037-0011).

In the Memphis CBSA the State of Arkansas currently operates an NO_2 monitor at its Marion site, (AQS 05-035-0005). Memphis-Shelby County Air Pollution Control requests EPA approve this site to meet minimum community-wide NO_2 monitoring requirements in the Memphis CBSA.

Near-Road Monitors

Memphis and Nashville are currently scheduled to receive funding during Fiscal year 2013 to establish a single near-road site in their respective CBSA's. In the meantime Tennessee APC and the local air pollution control agencies in Memphis and Nashville are working with the Tennessee Dept. of Transportation (TDOT), to identify acceptable sites and work out details to meet siting requirements.

Lead Monitoring:

There may be a need to relocate the lead monitoring site located near Gerdau Corporation (AQS 47-093-0023) in Knox County in the coming months. Due to a change in the right-of-way near the current monitoring site, relocation may be necessitated.

Tennessee Geographic Regions and Descriptions

In order to have a more meaningful understanding of its different land patterns and variations, geographers and geologists have divided the State into nine natural regions or physiographic provinces. From west to east (see map of Natural Regions of Tennessee) these are the Mississippi Alluvial Valley, West Tennessee Plain, West Tennessee Uplands, Western Highland Rim, Central Basin, Eastern Highland Rim, Cumberland Plateau, Valley and Ridge, and Unaka Mountains.

WEST TENNESSEE PLAIN

The West Tennessee Plain has an area of 7731 square miles and is the second largest physiograph province in the State. This plain is 45 to 65 miles wide and is bounded on the west by the Chickasaw Bluffs. The eastern boundary follows the drainage divided between the Mississippi River and the Western Valley of the Tennessee River. Eighteen of the State's counties are either completely or partially situated in the West Tennessee Plain. The topography of the West Tennessee Plain is a relatively flat terrain that slopes gently westward to the Mississippi River floodplain. Elevations of 450 feet are found on West Tennessee Plain's eastern side and around 280 feet on the west. Relief in most areas is less than 200 feet.

WEST TENNESSEE UPLANDS

The West Tennessee Uplands, the second smallest physiographic province in the State, occupies an area of 1928 square miles. The drainage divided between the Mississippi and Tennessee Rivers forms the region's western boundary, while the eastern boundary is marked by the Tennessee River. The width of this upland region is 15 to 45 miles and covers parts of seven of the State's counties. Although it is not considered a rugged region, the West Tennessee Uplands has greater relief and contrast than the West Tennessee Plain. Broad expanses of undulating plains are found here. The average elevation of this upland province is 700 feet with relief varying from 100 to 300 feet.

HIGHLAND RIM

The Highland Rim, covering an area of 10,572 square miles, is the largest physiographic province in Tennessee. It extends from the Tennessee River in the west to the western escarpment of the Cumberland Plateau in the east. A large part of the Highland Rim's center has been eroded out by the Cumberland River, forming the large, oval-shaped Central Basin. The presence of Central basin, as well as the Highland Rim being relatively narrow in the State's north and south borders, has led to the dividing of the Highland Rim into western and eastern divisions. The Western Highland Rim is the larger of the two, with an area of 6566 square miles. Together, these divisions account for area in 39 of the State's counties. The Western Highland Rim varies from 25 to 45 miles in width and consists of a rolling terrain heavily dissected by stream erosion. Elevations on the Western Highland Rim's tableland range from 800 to 1000 feet, while relief varies from 100 to 200 feet. The Eastern Highland Rim averages 25 miles in width and has an elevation of 900 to 1100 feet. The topography is comprised of an undulating tableland of low relief with widely scattered hills and knobs.

CENTRAL BASIN

The Central Basin, also known as the Nashville basin, is a larger pear-shaped area occupying much of the geographic center of the State. The area has a total of 5851 square miles, measures 65 miles east to west and 95 miles north to south. With the exception of the valley of the Cumberland River at its northern corners, the central Basin is entirely surrounded by the Highland Rim. Wilson, Rutherford, and Marshall Counties are situated entirely within the Basin; parts of 23 other counties are also found there. Differences in typography have caused the Central Basin to sometime be divided into two different regions. Large areas of the region's

geographic center are known as The Inner Basin. This topography is extremely level and has an average elevation of 650 feet. Relief in most areas is less than 50 feet. Relief in most areas is less than 50 feet. The few hills and knobs that rise above the landscape are commonly less than 100 feet in height. The Outer Basin includes the rest of the province and is comprised of an undulating, hilly type topography. Numerous hills and ridges mark the landscape and are especially prominent at the outer edge. The average elevation in this part of the basin is 750 feet, but may vary as much as 250 feet.

CUMBERLAND PLATEAU

Covering an area of 2980 square miles, the Cumberland Plateau is an elevated tableland bounded on the west by the Eastern Highland Rim and on the east by the Valley and Ridge. The greatest width, 75 miles, is near the Kentucky border. At its most southern point in the State, the Cumberland Plateau is about 35 miles in width. Five of the State's counties are entirely within the region, while another 17 counties are situated partially in this area. The Cumberland Plateau's topography varies in different parts of the region. In places, the surface has been cut by stream valleys and precipitous gorges that are 200 to 400 feet deep. The tableland part of the Cumberland Plateau has an average elevation of 1800 feet. The elevations are generally lower in the northern part at 1700 to 1900 feet. Far to the south in Marion and Hamilton Counties, the elevations are somewhat higher, around 2000 to 2100 feet. Relief varies from as little as 100 feet to as much as 400 feet.

VALLEY AND RIDGE

The Valley and Ridge covers 7703 square miles and is situated between the Cumberland Plateau to the west and the Unaka Mountains to the east. The width of the region ranges from as much as 70 miles along the Kentucky border to as little as 30 miles near the Georgia State Line. In most places, it averages 45 miles in width. Twenty-seven counties of Tennessee are either completely or partially found in this Valley and Ridge region. The topography of the Valley and Ridge consists of long linear ridges and parallel lowland valleys that trend in a northeast to southwest direction. The ridges usually have high elevations of 1100 to 1500 feet while the adjacent valley floors vary from 700 feet to 1000 feet. The ridges and valleys generally have high elevations in the northern part of the region; they are slightly less elevated to the south.

UNAKA MOUNTAINS

Covering an area of 2523 square miles, the Unaka Mountains region is the most eastern physiographic province in Tennessee and extended along its entire eastern border adjacent to North Carolina. The width of the region varies from 5 to 25 miles. Although 13 counties have part of their land area within the region, Johnson County is the only on having all of its area completely within the region. The Unaka Mountains region is known for having the highest and most rugged terrain in Tennessee. Lofty mountainous ridges and peaks, heavily forested and deeply carved by precipitous stream valleys, comprise the topography. The highest point, in both the region and the State, is Clingman's Dome (6643 ft) in Sevier County. In addition to Clingman's Dome, there are 13 other mountain peaks in the Unakas with heights of over 6000 feet and 33 peaks of more than 5000 feet. A very large percentage of those peaks are situated directly on the Tennessee State Line, with the greatest concentration found in Sevier County. Narrow lowland valleys and isolated coves are also a part of the topography of the region. The floors of these topographic features range from 1000 to 2000 feet in elevation.

Excerpt from draft of: Tennessee Division of Geology Bulletin 86, Tennessee Topography, by David D. Starnes (2009). The section is titled "Physiographic Provinces of Tennessee."

Tennessee Geographic Regions

Climate Synopsis for Tennessee

The highly varied topography of Tennessee has a significant impact on the state's climate. The landscape varies generally from west to east, starting with the gently rolling lowlands (200-600' above sea level) in the west, rising to the Highland Rim (600-1000') enclosing the Central Basin, and on up to the Cumberland Plateau (~2000') which trends northeast-southwest across the state in a belt 30-50 miles wide. East of the Plateau is the Great Valley of East Tennessee (elevations ranging from 1500' in the north down to 700' in the south) containing a series of northeast-southwest ridges. The eastern border of the state is dominated by the Great Smoky Mountains, with numerous peaks rising 4000' to 6000' above sea level.

Average annual temperatures across the state range from around 55F to a bit over 60F. Winter mean temperatures are near 35F over most of the state, while summer temperatures average between 75F and 80F. Of course, these general patterns are affected by topography: the higher mountain areas tend to have milder summers as well as colder, more blustery winters. The length of the growing season is also linked to topography: most of the state has a growing season between 180 and 220 days, but this stretches to over 235 days in the lowlands around Memphis and drops to near 130 days in the highest mountains to the east.

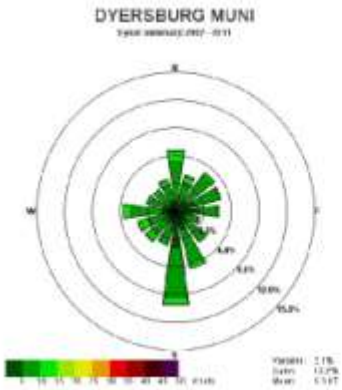
The principal source of moisture for the state is the Gulf of Mexico to the south, which results in a gradual decrease of precipitation from south to north. This gradient is largely obscured, however, by orographic effects. In West Tennessee, annual precipitation amounts range from 46 inches to 54 inches, increasing from the Mississippi bottomlands to the slight hills farther east. In Middle Tennessee, the variation is from around 45 inches in the Central Basin to 50-55 inches in the surrounding Highland Rim. The Cumberland Plateau also averages 50-55 inches per year. In the Great Valley of Eastern Tennessee, annual precipitation rises from a minimum of 40 inches in the north (the driest part of the state due to the rain shadow effect of the Great Smoky Mountains and the Cumberland Plateau) to over 50 inches in the south. The mountainous eastern border of the state is the wettest part, with annual totals of up to 80 inches in the higher, well-exposed peaks.

Over most of the state, the greatest precipitation occurs in winter and early spring owing to the more frequent passage of large-scale (frontal) storms over the region. A secondary maximum of precipitation occurs in midsummer in response to shower and thunderstorm activity, especially in July in the mountains of the east. Fall tends to be the dry season for the state, due to the higher frequency of slow-moving high pressure areas during this season. Average annual snowfall ranges from 4-6 inches in the south and west to over 10 inches in the east. Due to the relatively mild winter conditions over most of the state, snow cover rarely persists for more than a few days.

Severe storms are relatively infrequent in the state, being east of the center of tornado activity, south of most blizzard conditions, and too far inland to be often affected by hurricanes. An average of 11 tornadoes are observed in the state each year, mostly confined to areas west of the Cumberland Plateau. Hailstorms at a given location are observed 2 or 3 times a year, and damaging glaze storms occur in the state every 5 or 6 years. Thunderstorms are frequent in the warm season, and severe thunderstorms with damaging winds are experienced at scattered locations throughout the state each year.

Adapted from: Climatography of the United States, No. 60, National Climatic Data Center

Windrose Data for Tennessee



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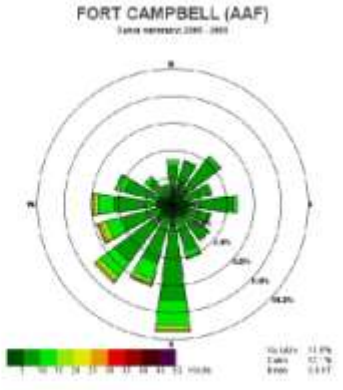

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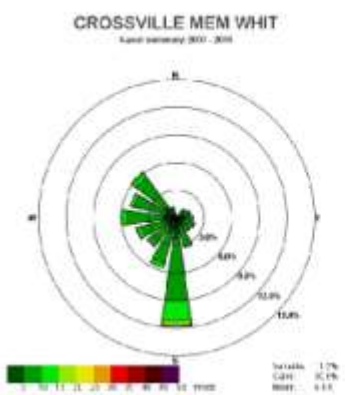

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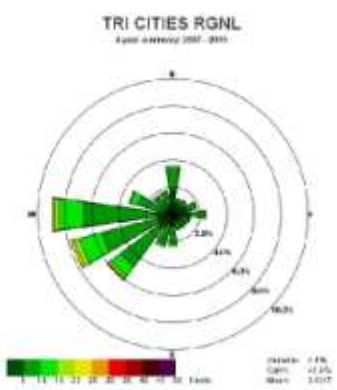

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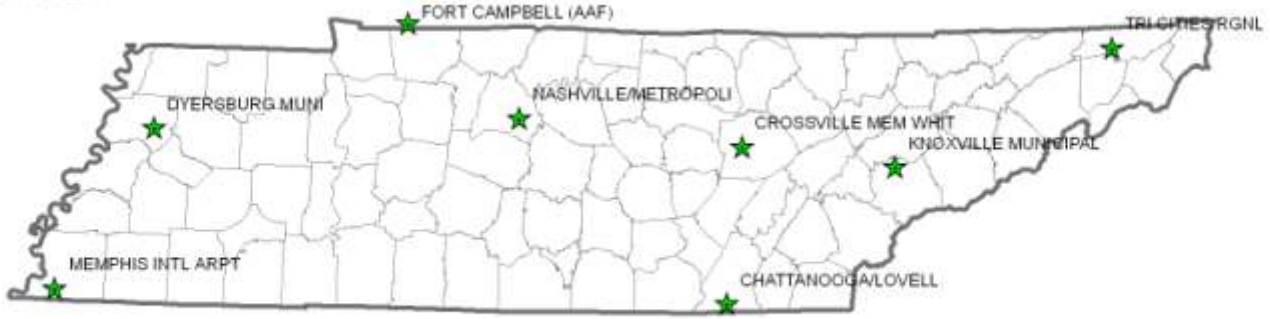

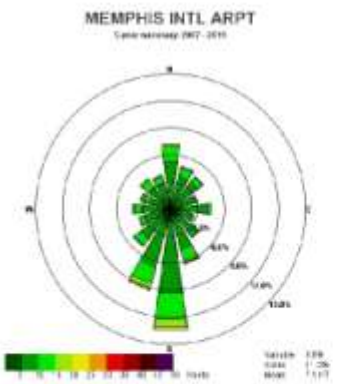

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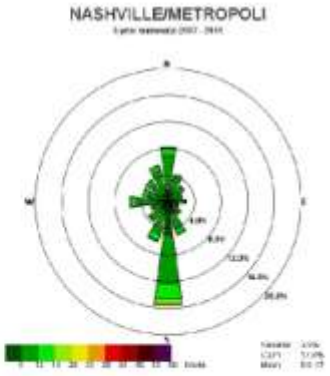

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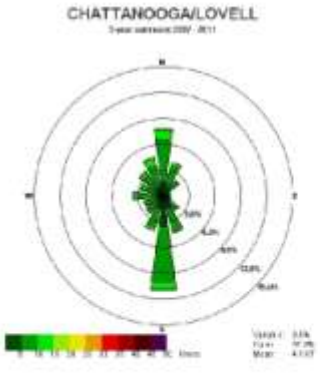

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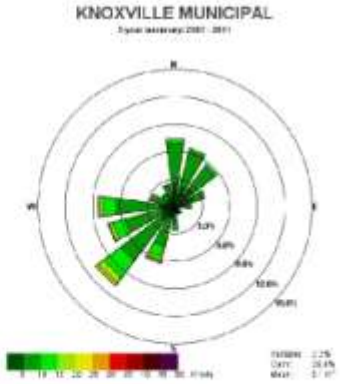


5 Yrs 2007 to 2011

Tennessee Metropolitan and Micropolitan Statistical Areas and Population Data

(2000 Census and Estimates to 2011 by US Census Bureau)

CBSA Code	Geographic area			4/1/2000*	
		POP EST 2011	CENSUS 2010	Estimates base	Census
	Metropolitan statistical areas, TN				
16860	Chattanooga, TN-GA	533,372	528,143	476,502	476,531
17300	Clarksville, TN-KY	277,701	273,949	232,045	232,000
17420	Cleveland, TN	116,834	115,788	104,015	104,015
27180	Jackson, TN	115,396	115,425	107,379	107,377
27740	Johnson City, TN	199,818	198,716	181,607	181,607
28700	Kingsport-Bristol-Bristol, TN-VA	309,793	309,544	298,486	298,484
28940	Knoxville, TN	704,500	698,030	616,077	616,079
32820	Memphis, TN-MS-AR	1,325,605	1,316,100	1,205,196	1,205,204
34100	Morristown, TN	137,494	136,608	123,081	123,081
34980	Nashville-Davidson--Murfreesboro--Franklin, TN	1,617,142	1,589,934	1,311,789	1,311,789
	Micropolitan statistical areas, TN				
11940	Athens, TN	52,508	52,266	49,010	49,015
15140	Brownsville, TN	18,470	18,787	19,797	19,797
17940	Columbia, TN	81,509	80,956	69,498	69,498
18260	Cookeville, TN	106,498	106,042	93,415	93,417
18900	Crossville, TN	56,632	56,053	46,801	46,802
20540	Dyersburg, TN	38,192	38,335	37,279	37,279
24620	Greeneville, TN	69,339	68,831	62,909	62,909
25340	Harriman, TN	53,838	54,181	51,911	51,910
26480	Humboldt, TN	49,935	49,683	48,149	48,152
29220	La Follette, TN	40,512	40,716	39,794	39,854
29980	Lawrenceburg, TN	42,115	41,869	39,924	39,926
30280	Lewisburg, TN	30,881	30,617	26,774	26,767
32280	Martin, TN	34,980	35,021	34,895	34,895
32660	McMinnville, TN	39,927	39,839	38,276	38,276
35460	Newport, TN	35,544	35,662	33,568	33,565
37540	Paris, TN	32,352	32,330	31,103	31,115
42940	Sevierville, TN	91,466	89,889	71,170	71,170
43180	Shelbyville, TN	45,509	45,058	37,586	37,586
46100	Tullahoma, TN	100,344	100,210	93,026	93,024
46460	Union City, TN-KY	38,545	38,620	40,202	40,202

***Table 1. Annual Estimates of the Population of Metropolitan and Micropolitan Statistical Areas: April 1, 2000 to July 1, 2009 (CBSA-EST2009-01), Source: U.S. Census Bureau, Population Division, Release Date: March 2010**

(Note: the new delineations based on the 2010 standards will be announced by OMB in 2013.)

Tennessee County Population Data Trends

County	POP2000	POP2010	Change	Percentage Growth
Anderson County	71,330	75,129	3,799	5.33%
Bedford County	37,586	45,058	7,472	19.88%
Benton County	16,537	16,489	(48)	-0.29%
Bledsoe County	12,367	12,876	509	4.12%
Blount County	105,823	123,010	17,187	16.24%
Bradley County	87,965	98,963	10,998	12.50%
Campbell County	39,854	40,716	862	2.16%
Cannon County	12,826	13,801	975	7.60%
Carroll County	29,475	28,522	(953)	-3.23%
Carter County	56,742	57,424	682	1.20%
Cheatham County	35,912	39,105	3,193	8.89%
Chester County	15,540	17,131	1,591	10.24%
Claiborne County	29,862	32,213	2,351	7.87%
Clay County	7,976	7,861	(115)	-1.44%
Cocke County	33,565	35,662	2,097	6.25%
Coffee County	48,014	52,796	4,782	9.96%
Crockett County	14,532	14,586	54	0.37%
Cumberland County	46,802	56,053	9,251	19.77%
Davidson County	569,891	626,681	56,790	9.97%
Decatur County	11,731	11,757	26	0.22%
DeKalb County	17,423	18,723	1,300	7.46%
Dickson County	43,156	49,666	6,510	15.08%
Dyer County	37,279	38,335	1,056	2.83%
Fayette County	28,806	38,413	9,607	33.35%
Fentress County	16,625	17,959	1,334	8.02%
Franklin County	39,270	41,052	1,782	4.54%
Gibson County	48,152	49,683	1,531	3.18%
Giles County	29,447	29,485	38	0.13%
Grainger County	20,659	22,657	1,998	9.67%
Greene County	62,909	68,831	5,922	9.41%
Grundy County	14,332	13,703	(629)	-4.39%
Hamblen County	58,128	62,544	4,416	7.60%
Hamilton County	307,896	336,463	28,567	9.28%
Hancock County	6,786	6,819	33	0.49%
Hardeman County	28,105	27,253	(852)	-3.03%
Hardin County	25,578	26,026	448	1.75%
Hawkins County	53,563	56,833	3,270	6.10%
Haywood County	19,797	18,787	(1,010)	-5.10%
Henderson County	25,522	27,769	2,247	8.80%
Henry County	31,115	32,330	1,215	3.90%
Hickman County	22,295	24,690	2,395	10.74%
Houston County	8,088	8,426	338	4.18%
Humphreys County	17,929	18,538	609	3.40%
Jackson County	10,984	11,638	654	5.95%
Jefferson County	44,294	51,407	7,113	16.06%
Johnson County	17,499	18,244	745	4.26%
Knox County	382,032	432,226	50,194	13.14%
Lake County	7,954	7,832	(122)	-1.53%
Lauderdale County	27,101	27,815	714	2.63%
Lawrence County	39,926	41,869	1,943	4.87%
Lewis County	11,367	12,161	794	6.99%
Lincoln County	31,340	33,361	2,021	6.45%
Loudon County	39,086	48,556	9,470	24.23%
McMinn County	49,015	52,266	3,251	6.63%
McNairy County	24,653	26,075	1,422	5.77%
Macon County	20,386	22,248	1,862	9.13%
Madison County	91,837	98,294	6,457	7.03%
Marion County	27,776	28,237	461	1.66%
Marshall County	26,767	30,617	3,850	14.38%
Maury County	69,498	80,956	11,458	16.49%
Meigs County	11,086	11,753	667	6.02%
Monroe County	38,961	44,519	5,558	14.27%
Montgomery County	134,768	172,331	37,563	27.87%
Moore County	5,740	6,362	622	10.84%
Morgan County	19,757	21,987	2,230	11.29%
Obion County	32,450	31,807	(643)	-1.98%
Overton County	20,118	22,083	1,965	9.77%
Perry County	7,631	7,915	284	3.72%
Pickett County	4,945	5,077	132	2.67%
Polk County	16,050	16,825	775	4.83%
Putnam County	62,315	72,321	10,006	16.06%
Rhea County	28,400	31,809	3,409	12.00%
Roane County	51,910	54,181	2,271	4.37%
Robertson County	54,433	66,283	11,850	21.77%
Rutherford County	182,023	262,604	80,581	44.27%
Scott County	21,127	22,228	1,101	5.21%
Sequatchie County	11,370	14,112	2,742	24.12%
Sevier County	71,170	89,889	18,719	26.30%
Shelby County	897,472	927,644	30,172	3.36%
Smith County	17,712	19,166	1,454	8.21%
Stewart County	12,370	13,324	954	7.71%
Sullivan County	153,048	156,823	3,775	2.47%
Sumner County	130,449	160,645	30,196	23.15%
Tipton County	51,271	61,081	9,810	19.13%
Trousdale County	7,259	7,870	611	8.42%
Unicoi County	17,667	18,313	646	3.66%
Union County	17,808	19,109	1,301	7.31%
Van Buren County	5,508	5,548	40	0.73%
Warren County	38,276	39,839	1,563	4.08%
Washington County	107,198	122,979	15,781	14.72%
Wayne County	16,842	17,021	179	1.06%
Weakley County	34,895	35,021	126	0.36%
White County	23,102	25,841	2,739	11.86%
Williamson County	126,638	183,182	56,544	44.65%
Wilson County	88,809	113,993	25,184	28.36%

Source: U.S. Census Bureau.

2010 Metropolitan/Micropolitan Areas of Tennessee

TAPC Monitoring Equipment Evaluation AMP

Equipment installed in the field. Equipment evaluation conducted Feb 23, 2012 to April 23, 2012 by TAPC staff.

Site	Monitor		Chart Recorder		Data Logger		Calibrator		Shelter	
	Model	**Condition**	**Model**	**Condition**	**Model**	**Condition**	**Model**	**Condition**	**Model**	**Condition**
Blountville	ML8810	Good	L&N	Good	ESC 8816	Good	Dasibi 1008PC	Good	T&R 8X20	Good
Blountville	ML8810	Good			ESC 8816	Good				
Kingsport	ML8810	Good	L&N	Good	ESC 8816	Good	Dasibi 1008PC	Good	x	Good
Kingsport					ESC 8816	Good				
Cookeville	R&P 2025	Good					Streamline Pro	Good		
Crab Orchard	TEOM1400a	Good			ESC 8816	Good	Streamline Pro	Good		
Freel's Bend	API 400A	Good	L&N	Good	ESC 8816	Good	Dasibi 1008PC	Good	820	Good
New Market	API 400E	Good	L&N	Good	ESC 8832	Good	Dasibi 1008PC	Good	820	Good
Loudon Pope	R&P 2025	Good					Streamline Pro			
Loudon Pope	ATEC2200	Good			ESC 8832	Good				Good
Loudon Pope	Vasillia	Good								
Loudon Mid Sch	Teledyne	Good	EA	Good	ESC 8816	Good	Dasibi 1008PC	Good	O D I, Model 818	Good
Kingsport	R&P 2025	Good					Streamline Pro	Good		
Kingsport	TEOM1400a	Good			ESC 8832	Good				
Bristol	Hivol	Good								
Bristol	Hivol	Good					Kit #9	Good		
Clarksville	TEOM1400a	Good			ESC 8816	Good			432SP	Good

Clarksville	URG3000N	Good								
Clarksville	MetOne SASS	Good								
Clarksville	Thermo 2025	Good								
Centerhill	MIC AUC	Good			ESC 8816	Good				
Centerhill	Climatronics 101156-GO	Good								
Cedars of Leb	TEI49C	Good	Westronics 4000	Good	ESC 8816	Good	Dasibi 1008PC	Good	Trailer	Good
Cedars of Leb	OA3502R	Good			ESC 8816	Good				
Cedars of Leb	OA3502R	Good								
Hendersonville	TEI49C	Good	Westronics 4000	Good	ESC 8816	Good	Dasibi 1008PC	Good	Trailer	Good
Hendersonville	R&P 2025	Good								
Hendersonville	R&P 2025	Good								
Hendersonville	TEOM1400a	Good								
Hendersonville	CSI	Good								
Jackson	TEOM1400a	Good			ESC 8816	Good			432SP	Good
Maryville	R&P 2025	Good								
Maryville	TEOM1400a	Good			ESC 8816	Good	Streamline Pro	Good	TEOM 432SP	Good
Meigs	API 400A	Good	L&N	Good	ESC 8816	Good	Dasibi 1008PC	Good	T&R Custom	Good
Kingston TVA	TEOM1400a	Good			ESC 8816	Good				Good
Kingston TVA	x	Good								
Cottontown	TEI49C	Good	L&N	Good	ESC 8816	Good	Dasibi 1008PC	Good	x	Good
Fairview	TEI49C	Good	EA	Good	ESC 8832	Good	Dasibi 1008PC	Good	x	Good
Eagleville	TEI49C	Good	L&N	Good	ESC 8816	Good	Dasibi 1008PC	Good	820	Good

Eagleville					ESC 8816	Good				
Columbia	R&P 2025	Good					Streamline Pro			
Lawrence	R&P 2025	Good								
Lawrence	TEOM1400a	Good			ESC 8816	Good	Dasibi 1008PC	Good	x	Good
Lawrence	x		L11013	Good						
Cleveland	Graseby/GMW	Good					x	Good		
Cleveland	Graseby/GMW	Good								
Athens	R&P 2025	Good					Streamline Pro	Good		
Athens	TEOM1400a	Good			ESC 8832	Good			Exto 4325P	Good
Luttrell	TEOM1400a	Good			ESC 8816	Good	Streamline Pro	Good	x	Good
Harriman	R&P 2025	Good								
Harriman	TEOM1400a	Good			ESC 8816	Good			x	Good
Camden	Climatronics Sonic	Good			CS CR200	Good				

Equipment in storage. Equipment evaluation conducted Feb 23, 2012 to April 23, 2012 by TAPC staff.

Site	**Monitor**		**Chart Recorder**		**Data Logger**		**Calibrator**		**Shelter**	
	Model	**Condition**	**Model**	**Condition**	**Model**	**Condition**	**Model**	**Condition**	**Model**	**Condition**
Hatchie Refuge									x	Good
Algood									x	Good
Copperhill									x	Good
Benton Co									x	Good
NJ State Park									x	Good
NFO Storage and QA	ML 9850	Poor	Westronics 4010	Poor	8816	Good	1008PC	Poor	TEOM	Good
NFO Storage and QA	ML 9850	Poor	Speedomax	Poor	8816	Poor	1008PC	Poor		

NFO Storage and QA	ML 9850	Poor	Speedomax	Poor	8816	Poor	1008PC	Poor		
NFO Storage and QA	ML 9850	Poor	Westronics 4010	Poor	8816	Poor	1008PC	Poor		
NFO Storage and QA	TEOM 1400a	Good	Westronics 4010	Poor	8816	Poor	1008PC	Poor		
NFO Storage and QA	TEOM 1400a	Good	Westronics 4010	Poor	8816	Good	1008PC	Poor		
NFO Storage and QA	TEOM 1400a	Poor		Poor	8832	Good	1008PC	Poor		
NFO Storage and QA	TEOM 1400a	Poor	Speedomax	Poor	8832	Good	1008PC	Poor		
NFO Storage and QA	TEOM 1400a	Poor			8000B	Poor	1008PC	Poor		
NFO Storage and QA	TEOM 1400a	Poor					1008PC	Poor		
NFO Storage and QA	TEOM 1400a	Poor					1008PC	Poor		
NFO Storage and QA	TEOM 1400a	Poor					1008PC	Good		
NFO Storage and QA	MetOne SASS	Poor					1008PC	Good		
NFO Storage and QA	MetOne SASS	Good					1008PC	Good		
NFO Storage and QA	MetOne SASS	Good					1008PC	Poor		
NFO Storage and QA	MetOne SASS	New					1008PC	Poor		
NFO Storage and QA	R&P 2025	Good					1008PC	Poor		
NFO Storage and QA	R&P 2025	Good					1008PC	Poor		
NFO Storage and QA	R&P 2025	Poor					1008PC	Poor		
NFO Storage and QA	R&P 2025	Poor					1008PC	Poor		
NFO Storage and QA	R&P 2025	Poor					Photocal 3000	Poor		

NFO Storage and QA	R&P 2025	Poor					Teledyne 703E	Good		
NFO Storage and QA	R&P 2025	Good					Teledyne 703E	New		
NFO Storage and QA	R&P 2025	Good					Teledyne 703E	Good		
NFO Storage and QA	R&P 2025	Poor					Teledyne 703E	Good		
NFO Storage and QA	R&P 2025	Good					Teledyne 703E	New		
NFO Storage and QA	R&P 2025	Good					Environics 100	Poor		
NFO Storage and QA	R&P 2025	Good					Environics 100	Poor		
NFO Storage and QA	R&P 2025	Poor					Environics 100	Poor		
NFO Storage and QA	R&P 2025	Good					TEI 146	Poor		
NFO Storage and QA	R&P 2025	Poor					GMW 76-100	Good		
NFO Storage and QA	R&P 2025	New					GMW 76-100	Good		
NFO Storage and QA	1003AH	Poor					GMW 76-100	Good		
NFO Storage and QA	1003AH	Poor					GMW 76-100	Good		
NFO Storage and QA	ML8850 SO2	Poor					GMW 76-100	Good		
NFO Storage and QA	ML8850 SO2	Poor					GMW 76-100	Good		
NFO Storage and QA	ML8850 SO2	Poor					GMW 2000	Good		
NFO Storage and QA	ML8850 SO2	Poor					Streamline Pro	Good		
NFO Storage and QA	ML8850 SO2	Poor					Streamline Pro	Good		
NFO Storage and QA	ML8850 SO2	Poor					Streamline Pro	Good		

NFO Storage and QA	ML8850 SO2	Poor					Streamline Pro	Good		
NFO Storage and QA	Thermo 43 SO2	Poor					Streamline Pro	Good		
NFO Storage and QA	Thermo 43A SO2	Poor					Streamline Pro	Good		
NFO Storage and QA	Thermo 43A SO2	Poor					Streamline Pro	Good		
NFO Storage and QA	ML8810	Poor					Tetracal	Good		
NFO Storage and QA	Teledyne 400E	Good					Tetracal	Good		
NFO Storage and QA	Teledyne 400E	Good					GMW 76-100	Good		
NFO Storage and QA	TEI 49	Poor					Streamline FTS	Poor		
NFO Storage and QA	TEI 49	Poor					Streamline FTS	Poor		
NFO Storage and QA	ML 9812	Poor					Streamline FTS	Poor		
NFO Storage and QA	ML 9812	Poor					Streamline FTS	Poor		
NFO Storage and QA	ML 8810	Poor					Streamline FTS	Poor		
NFO Storage and QA	ML 8810	Poor					Streamline FTS	Poor		
NFO Storage and QA	ML 9841	Poor					Streamline FTS	Poor		
NFO Storage and QA	API 400A	Poor					Streamline FTS	Poor		
NFO Storage and QA	API 400A	Poor					Roots meter 5M125TC	Good		
NFO Storage and QA	API 400A	Good					BGI Orifice	Good		
NFO Storage and QA	API 400A	Good					BGI Orifice	Good		

NFO Storage and QA	API 400A	Good					BGI Orifice	Good		
NFO Storage and QA	API 400A	Good					ML 8500	Poor		
NFO Storage and QA	API 400A	Poor					ML 8500	Poor		
NFO Storage and QA	TEI 49C	Good					ML 8500	Poor		
NFO Storage and QA	TEI 49C	Poor					ML 8500	Poor		
NFO Storage and QA	TEI 49i	Good					ML 8500	Poor		
NFO Storage and QA	TEI 49i	Good					ML 8500	Poor		
NFO Storage and QA	TEI 49i	Poor					Buck M-5	Good		
NFO Storage and QA	Tisch Housing	Good					BIOS DryCal DC-1B Rev 2.06F	Poor		
NFO Storage and QA	Tisch Housing	Good					Environics Calibrator	Poor		
NFO Storage and QA	Tisch Housing	Good					Environics Calibrator	Poor		
NFO Storage and QA	Tisch Housing	Good					Environics Calibrator	Poor		
NFO Storage and QA	GMW Housing	Good					Dasibi Calibrator	Poor		
NFO Storage and QA	GMW Housing	Good					Bios Drycal flow meter	Poor		
NFO Storage and QA	GMW Housing	Good					Dasibi Calibrator	Poor		
NFO Storage and QA	GMW Housing	Good					Dasibi Calibrator	Poor		
NFO Storage and QA	Anderson 2000	Good					Dasibi Calibrator	Poor		
NFO Storage	Graseby	Good					Roots	Good		

and QA							Meter			
NFO Storage and QA	Graseby	Good					Cal Bench	Good		
NFO Storage and QA	Graseby	Poor								
NFO Storage and QA	R&P 2025	Poor								
NFO Storage and QA	R&P 2025	Good								
NFO Storage and QA	Aircheck 224-PCXR7	Poor								
NFO Storage and QA	Aircheck 224-PCXR7	Poor								
NFO Storage and QA	Aircheck 224-PCXR7	Poor								
NFO Storage and QA	API Analyzer	Good								

The Purpose of Tennessee's Ambient Air Monitoring Network

There are several criteria used to determine the need for ambient air quality monitoring. Some of the criteria are as follows:

EPA National Ambient Air Quality Standards (NAAQS) Criteria pollutant monitoring network requirements for the NCore (National Core) formally NAMS (National Air Monitoring Site), SLAMS (State and Local Air Monitoring Site) and SPM (Special Purpose Monitoring) monitoring networks.

The Code of Federal Regulations (CFR) sets forth as regulations the requirements for air quality monitoring to be implemented by the states and EPA. These requirements are primarily organized around population and emission density in a given area with the number of required monitors and the distribution of the monitors within the networks specified by these regulations. Additionally 40CFR, Part 58, Appendix D specifies criteria that must be followed in designing the NCore and SLAMS networks. The EPA must approve design and/or modifications to these networks.

Additional federal regulations also specify requirements for Prevention of Significant Deterioration (PSD) monitoring networks. This monitoring is addressed at new facilities to be constructed in a given area or around certain types of existing industry such as large coal fired power plants or facilities that release toxic heavy metals such as lead to the environment.

Air quality monitoring is required to be conducted to alert citizens in given areas to elevated levels of air pollutants in cities or communities of designated population levels that are required to provide Air Quality Index (AQI) reports to the general public.

Air quality monitoring is conducted to address the need for background air quality data and to provide needed air quality data that is used in industrial recruitment efforts with the monitoring areas periodically rotated to new locations throughout the state on a routine basis.

Special air quality monitoring studies are conducted based on identified needs for monitoring data in a given area.

Citizen complaints and enforcement investigations related to air quality are other reasons for air quality monitoring usually in or around a specific area related to the complaint or investigation.

Requests from citizens for special air monitoring studies are also a reason for air monitoring activities.

The federal regulations also specify the frequency, method, location requirements, equipment, quality assurance procedures and reporting of data collected from the ambient air monitoring networks.

Ozone monitoring network requirements

40 CFR 58 Subpart G, Appendix D to Part 58 Revised as of July 1, 2011

TABLE D–2 OF APPENDIX D TO PART 58.— SLAMS MINIMUM O3 MONITORING REQUIREMENTS

MSA population[1, 2]	Most recent 3-year design value concentrations ≥85% of any O3 NAAQS[3]	Most recent 3-year design value concentrations <85% of any O3 NAAQS[3,4]
>10 million	4	2
4–10 million	3	1
350,000–<4 million	2	1
50,000–<350,000 [5]	1	0

1 Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).
2 Population based on latest available census figures.
3 The ozone (O3) National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.
4 These minimum monitoring requirements apply in the absence of a design value.
5 Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population.

Note: The NAAQS for ozone was revised by EPA March 12, 2008 to 0.075 PPM. There were no regulatory changes made to the network monitoring requirements at that time.

PM 2.5 monitoring network requirements

40 CFR 58 Subpart G, Appendix D to Part 58 Revised as of July 1, 2011

TABLE D–5 OF APPENDIX D TO PART 58. PM2.5 MINIMUM MONITORING REQUIREMENTS

MSA population[1, 2]	Most recent 3-year design value concentrations ≥85% of any $PM_{2.5}$ NAAQS[3]	Most recent 3-year design value concentrations <85% of any $PM_{2.5}$ NAAQS[3,4]	Continuous PM2.5 Monitoring	PM2.5 Background and Transport Sites	PM2.5 Chemical Speciation Sites
>1,000,000	3	2	1 - 2	One site each per state for background and transport.	Existing STN Required Site(s)
500,000–1,000,000	2	1	1		
50,000–<500,000 [5]	1	0	0 - 1		

1 Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).
2 Population based on latest available census figures.
3 The PM2.5 National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.
4 These minimum monitoring requirements apply in the absence of a design value.
5 Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population.

4.7.2 Requirement for Continuous PM2.5 Monitoring. The State, or where appropriate, local agencies must operate continuous PM2.5 analyzers equal to at least one-half (round up) the minimum required sites listed in Table D-5 of this appendix. At least one required continuous analyzer in each MSA must be collocated with one of the required FRM/FEM/ARM monitors, unless at least one of the required FRM/FEM/ARM monitors is itself a continuous FEM or ARM monitor in which case no collocation requirement applies. State and local air monitoring agencies must use methodologies and quality assurance/quality control (QA/QC) procedures approved by the EPA Regional Administrator for these required continuous analyzers.

4.7.3 Requirement for PM2.5 Background and Transport Sites. Each State shall install and operate at least one PM2.5 site to monitor for regional background and at least one PM2.5 site to monitor regional transport.

4.7.4 PM2.5 Chemical Speciation Site Requirements. Each State shall continue to conduct chemical speciation monitoring and analyses at sites designated to be part of the PM2.5 Speciation Trends Network (STN). The selection and modification of these STN sites must be approved by the Administrator.

PM 10 monitoring network requirements

40 CFR 58 Subpart G, Appendix D to Part 58 Revised as of July 1, 2011

TABLE D–4 OF APPENDIX D TO PART 58. PM10 MINIMUM MONITORING REQUIREMENTS (NUMBER OF STATIONS PER MSA) 1

Population category	High concentration[2]	Medium concentration[3]	Low concentration[4,5]
>1,000,000	6–10	4–8	2–4
500,000–1,000,000	4–8	2–4	1–2
250,000–500,000	3–4	1–2	0–1
100,000–250,000	1–2	0–1	0

1 Selection of urban areas and actual numbers of stations per area within the ranges shown in this table will be jointly determined by EPA and the State Agency.
2 High concentration areas are those for which ambient PM10 data show ambient concentrations exceeding the PM10 NAAQS by 20 percent or more.
3 Medium concentration areas are those for which ambient PM10 data show ambient concentrations exceeding 80 percent of the PM10 NAAQS.
4 Low concentration areas are those for which ambient PM10 data show ambient concentrations less than 80 percent of the PM10 NAAQS.
5 These minimum monitoring requirements apply in the absence of a design value.

SO2 monitoring network requirements

40 CFR 58 Subpart G, Appendix D to Part 58 Revised as of July 1, 2011

4.4 Sulfur Dioxide (SO2) Design Criteria.

4.4.1 General Requirements. (a) State and, where appropriate, local agencies must operate a minimum number of required SO2 monitoring sites as described below.

4.4.2 Requirement for Monitoring by the Population Weighted Emissions Index.

(a) The population weighted emissions index (PWEI) shall be calculated by States for each core based statistical area (CBSA) they contain or share with another State or States for use in the implementation of or adjustment to the SO2 monitoring network. The PWEI shall be calculated by multiplying the population of each CBSA, using the most current census data or estimates, and the total amount of SO2 in tons per year emitted within the CBSA area, using an aggregate of the most recent county level emissions data available in the National Emissions Inventory for each county in each CBSA. The resulting product shall be divided by one million, providing a PWEI value, the units of which are million persons-tons per year. For any CBSA with a calculated PWEI value equal to or greater than 1,000,000, a minimum of three SO2 monitors are required within that CBSA. For any CBSA with a calculated PWEI value equal to or greater than 100,000, but less than 1,000,000, a minimum of two SO2 monitors are required within that CBSA. For any CBSA with a calculated PWEI value equal to or greater than 5,000, but less than 100,000, a minimum of one SO2 monitor is required within that CBSA.

(1) The SO2 monitoring site(s) required as a result of the calculated PWEI in each CBSA shall satisfy minimum monitoring requirements if the monitor is sited within the boundaries of the parent CBSA and is one of the following site types (as defined in section 1.1.1 of this appendix): population

exposure, highest concentration, source impacts, general background, or regional transport. SO2 monitors at NCore stations may satisfy minimum monitoring requirements if that monitor is located within a CBSA with minimally required monitors under this part. Any monitor that is sited outside of a CBSA with minimum monitoring requirements to assess the highest concentration resulting from the impact of significant sources or source categories existing within that CBSA shall be allowed to count towards minimum monitoring requirements for that CBSA.

PWEI calculations were performed for CBSA's in Tennessee based on emissions and populations listed in the following table. Based on these calculations ambient sulfur dioxide monitors are required as listed in the table.

CBSA ID	CBSA Name		2008 NEI v1.5 so2 (tpy)	Population (2010)	PWEI in Million persons-tpy	Required Monitors	Population (2009) Est.	PWEI in Million persons-tpy	Required Monitors
34980	Nashville-Davidson--Murfreesboro--Franklin	TN	41,476	1,589,934	65,944	1	1,582,264	65,626	1
28940	Knoxville	TN	39,833	698,030	27,805	1	699,247	27,853	1
32820	Memphis	TN-MS-AR	17,651	1,316,100	23,231	1	1,304,926	23,034	1
28700	Kingsport-Bristol-Bristol	TN-VA	56,754	309,544	17,568	1	305,629	17,346	1
17300	Clarksville	TN-KY	16,820	273,949	4,608	0	268,546	4,517	0
25340	Harriman	TN	50,674	54,181	2,746	0	53,508	2,711	0
16860	Chattanooga	TN-GA	2,178	528,143	1,150	0	524,303	1,142	0
27740	Johnson City	TN	2,976	198,716	591	0	197,381	587	0
34100	Morristown	TN	4,004	136,608	547	0	137,612	551	0
27180	Jackson	TN	2,894	115,425	334	0	113,629	329	0
17420	Cleveland	TN	2,692	115,788	312	0	113,358	305	0

Population Weighted Emissions Index (PWEI) Calcuations - April 2012 - Using 2010 Census Data & 2008 NEI v1.5 (no fires included)

4.4.3 Regional Administrator Required Monitoring.

(a) The Regional Administrator may require additional SO2 monitoring stations above the minimum number of monitors required in 4.4.2 of this part, where the minimum monitoring requirements are not sufficient to meet monitoring objectives. The Regional Administrator may require, at his/her discretion, additional monitors in situations where an area has the potential to have concentrations that may violate or contribute to the violation of the NAAQS, in areas impacted by sources which are not conducive to modeling, or in locations with susceptible and vulnerable populations, which are not monitored under the minimum monitoring provisions described above. The Regional Administrator and the responsible State or local air monitoring agency shall work together to design and/or maintain the most appropriate SO2 network to provide sufficient data to meet monitoring objectives

4.4.5 NCore Monitoring.

(a) SO2 measurement are included within the NCore multi-pollutant site requirements as described in paragraph (3)(b) of this appendix. NCorebased SO2 measurements are primarily used to characterize SO2 trends and assist in understanding SO2 transport across representative areas in urban or rural locations and are also used for comparison with the SO2 NAAQS. SO2 monitors at NCore sites that exist in CBSAs with minimum monitoring requirements per section 4.4.2 above shall be allowed to count towards those minimum monitoring requirements.

NO2 monitoring network requirements

40 CFR 58 Subpart G, Appendix D to Part 58 Revised as of July 1, 2011

4.3.2 Requirement for Near-road NO2 Monitors

(a) Within the NO2 network, there must be one microscale near-road NO2 monitoring station in each CBSA with a population of 500,000 or more persons to monitor a location of expected maximum hourly concentrations sited near a major road with high AADT counts as specified in paragraph 4.3.2(a)(1) of this appendix. An additional near-road NO2 monitoring station is required for any CBSA with a population of

2,500,000 persons or more, or in any CBSA with a population of 500,000 or more persons that has one or more roadway segments with 250,000 or greater AADT counts to monitor a second location of expected maximum hourly concentrations. CBSA populations shall be based on the latest available census figures.

(1) The near-road NO2 monitoring stations shall be selected by ranking all road segments within a CBSA by AADT and then identifying a location or locations adjacent to those highest ranked road segments, considering fleet mix, roadway design, congestion patterns, terrain, and meteorology, where maximum hourly NO2 concentrations are expected to occur and siting criteria can be met in accordance with appendix E of this part. Where a State or local air monitoring agency identifies multiple acceptable candidate sites where maximum hourly NO2 concentrations are expected to occur, the monitoring agency shall consider the potential for population exposure in the criteria utilized to select the final site location. Where one CBSA is required to have two near-road NO2 monitoring stations, the sites shall be differentiated from each other by one or more of the following factors: fleet mix; congestion patterns; terrain; geographic area within the CBSA; or different route, interstate, or freeway designation.

(b) Measurements at required near-road NO2 monitor sites utilizing chemiluminescence FRMs must include at a minimum: NO, NO2, and NOX.

Originally, near –road monitoring sites were to be established and in operation by January 1, 2013. However, the lack of funding has delayed the implementation of near-road monitoring requirements. As a result EPA is following a build and hold plan in establishing the near-road monitoring network. The Memphis and Nashville CBSA's are listed in the second phase of the build and hold plan and are scheduled to receive funding during fiscal year 2013 to establish a single near-road site in each CBSA. In the meantime Tennessee APC and the local air pollution control agencies in Memphis and Nashville are working with the Tennessee Department of Transportation (TDOT), to identify acceptable sites and work out details to meet siting requirements set forth by EPA and TDOT.

4.3.3 Requirement for Area-wide NO2 Monitoring

(a) Within the NO2 network, there must be one monitoring station in each CBSA with a population of 1,000,000 or more persons to monitor a location of expected highest NO2 concentrations representing the neighborhood or larger spatial scales. PAMS sites collecting NO2 data that are situated in an area of expected high NO2 concentrations at the neighborhood or larger spatial scale may be used to satisfy this minimum monitoring requirement when the NO2 monitor is operated year round. Emission inventories and meteorological analysis should be used to identify the appropriate locations within a CBSA for locating required area-wide NO2 monitoring stations. CBSA populations shall be based on the latest available census figures.

An area-wide NO_2 monitoring site is required in each of the Memphis and Nashville CBSA's. An area-wide NO_2 monitoring site is currently in operation in the Nashville CBSA (Site 47-037-0011). Currently the State of Arkansas operates an NO_2 monitor at its Marion site (AQS 05-035-0005) which is in the Memphis CBSA. Consideration should be given to approving this site to meet the Community-Wide NO_2 monitoring requirement in the Memphis CBSA.

Lead monitoring network requirements

40 CFR 58 Subpart G, Appendix D to Part 58 Revised as of July 1, 2011

4.5 Lead (Pb) Design Criteria. *Lead (Pb) Design Criteria.*

(a) State and, where appropriate, local agencies are required to conduct ambient air Pb monitoring near Pb sources which are expected to or have been shown to contribute to a maximum Pb concentration in ambient air in excess of the NAAQS, taking into account the logistics and potential for population exposure. At a minimum, there must be one source-oriented SLAMS site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.50 or more tons per year and from each airport which emits 1.0 or more tons per year based on either the most recent National Emission Inventory (*http://www.epa.gov/ttn/chief/ eiinformation.html*) or other scientifically justifiable methods and data (such as

improved emissions factors or site-specific data) taking into account logistics and the potential for population exposure.

(i) One monitor may be used to meet the requirement in paragraph 4.5(a) for all sources involved when the location of the maximum Pb concentration due to one Pb source is expected to also be impacted by Pb emissions from a nearby source (or multiple sources). This monitor must be sited, taking into account logistics and the potential for population exposure, where the Pb concentration from all sources combined is expected to be at its maximum.

(ii) The Regional Administrator may waive the requirement in paragraph 4.5(a) for monitoring near Pb sources if the State or, where appropriate, local agency can demonstrate the Pb source will not contribute to a maximum Pb concentration in ambient air in excess of 50% of the NAAQS (based on historical monitoring data, modeling, or other means). The waiver must be renewed once every 5 years as part of the network assessment required under 58.10(d).

(b) State and, where appropriate, local agencies are required to conduct non-source oriented Pb monitoring at each NCore site required under paragraph 3 of this appendix in a CBSA with a population of 500,000 or more.

CO monitoring network requirements

40 CFR 58 Subpart G, Appendix D to Part 58 Revised as of July 1, 2011

4.2 Carbon Monoxide (CO) Design Criteria.

(a) There are no minimum requirements for the number of CO monitoring sites. Continued operation of existing SLAMS CO sites using FRM or FEM is required until discontinuation is approved by the EPA Regional Administrator. Where SLAMS CO monitoring is ongoing, at least one site must be a maximum concentration site for that area under investigation.

On January 28, 2011, EPA proposed to retain the existing National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO). EPA is proposing changes to the ambient air monitoring requirements for CO. EPA is proposing to require co-location of these CO monitors with a subset of nitrogen dioxide (NO2), monitors that are required, as part of the January, 2010 revision to the NAAQS for NO2. Specifically, EPA is proposing to require the colocation with "near-road" NO2 monitors in urban areas having populations of 1 million or more. EPA is proposing that the required CO monitors would be operating by January 1, 2013. EPA is also proposing that EPA Regional Administrators would have the authority to require additional monitoring in case-by-case circumstances, such as in areas impacted by major stationary CO sources, in urban downtown areas or urban street canyons, or in areas adversely impacted by meteorological and/or topographical influences.

Index reporting requirements

40 CFR 58 Subpart F, 58.50 Revised as of July 1, 2011

58.50 Index reporting.

(a) The State or where applicable, local agency shall report to the general public on a daily basis through prominent notice an air quality index that complies with the requirements of appendix G to this part.

(b) Reporting is required for all individual MSA with a population exceeding 350,000.

(c) The population of a MSA for purposes of index reporting is the most recent decennial U.S. census population.

Geographic area	2000 Census	2010 Census	Required to Have AQI Reporting	Daily AQI/Air Quality Forecasts Provided
Chattanooga, TN-GA	476,531	528,143	Yes	Yes
Clarksville, TN-KY	232,000	273,949	No	Yes
Cleveland, TN	104,015	115,788	No	No
Jackson, TN	107,377	115,425	No	No
Johnson City, TN	181,607	198,716	No	Yes Based on the combined population of both areas.
Kingsport-Bristol-Bristol, TN-VA	298,484	309,544	No	

Knoxville, TN	616,079	698,030	Yes	Yes In addition, the GSMNP has a separate AQI/Forecast provided.
Memphis, TN-MS-AR	1,205,204	1,316,100	Yes	Yes
Morristown, TN	123,081	136,608	No	No
Nashville-Davidson--Murfreesboro, TN	1,311,789	1,589,934	Yes	Yes

NCore monitoring network requirements and PM 10-2.5

40 CFR 58 Subpart G, Appendix D to Part 58 Revised as of July 1, 2011

3. Design Criteria for NCore Sites

(a) Each State (i.e. the fifty States, District of Columbia, Puerto Rico, and the Virgin Islands) is required to operate at least one NCore site. States may delegate this requirement to a local agency. States with many MSAs often also have multiple air sheds with unique characteristics and, often, elevated air pollution. These States include, at a minimum, California, Florida, Illinois, Michigan, New York, North Carolina, Ohio, Pennsylvania, and Texas. These States are required to identify one to two additional NCore sites in order to account for their unique situations. These additional sites shall be located to avoid proximity to large emission sources. Any State or local agency can propose additional candidate NCore sites or modifications to these requirements for approval by the Administrator. The Ncore locations should be leveraged with other multi-pollutant air monitoring sites including PAMS sites, National Air Toxics Trends Stations (NATTS) sites, CASTNET sites, and STN sites. Site leveraging includes using the same monitoring platform and equipment to meet the objectives of the variety of programs where possible and advantageous.

(b) The NCore sites must measure, at a minimum, PM2.5 particle mass using continuous and integrated/filter-based samplers, speciated PM2.5, PM10–2.5 particle mass, speciated PM10–2.5, O3, SO2, CO, NO/NOy, wind speed, wind direction, relative humidity, and ambient temperature. NCore sites in CBSA with a population of 500,000 people (as determined in the latest Census) or greater shall also measure Pb either as Pb-TSP or Pb-PM10. The EPA Regional Administrator may approve an alternative location for the Pb measurement where the alternative location would be more appropriate for logistical reasons and the measurement would provide data on typical Pb concentrations in the CBSA.

(1) Although the measurement of NOy is required in support of a number of monitoring objectives, available commercial instruments may indicate little difference in their measurement of NOy compared to the conventional measurement of NOX, particularly in areas with relatively fresh sources of nitrogen emissions. Therefore, in areas with negligible expected difference between NOy and NOX measured concentrations, the Administrator may allow for waivers that permit NOX monitoring to be substituted for the required NOy monitoring at applicable NCore sites.

(2) EPA recognizes that, in some cases, the physical location of the NCore site may not be suitable for representative meteorological measurements due to the site's physical surroundings. It is also possible that nearby meteorological measurements may be able to fulfill this data need. In these cases, the requirement for meteorological monitoring can be waived by the Administrator.

40 CFR 58 Subpart G, Appendix D to Part 58 Revised as of July 1, 2011

4.8 Coarse Particulate Matter ($PM_{10-2.5}$) Design Criteria.

4.8.1 General Monitoring Requirements.

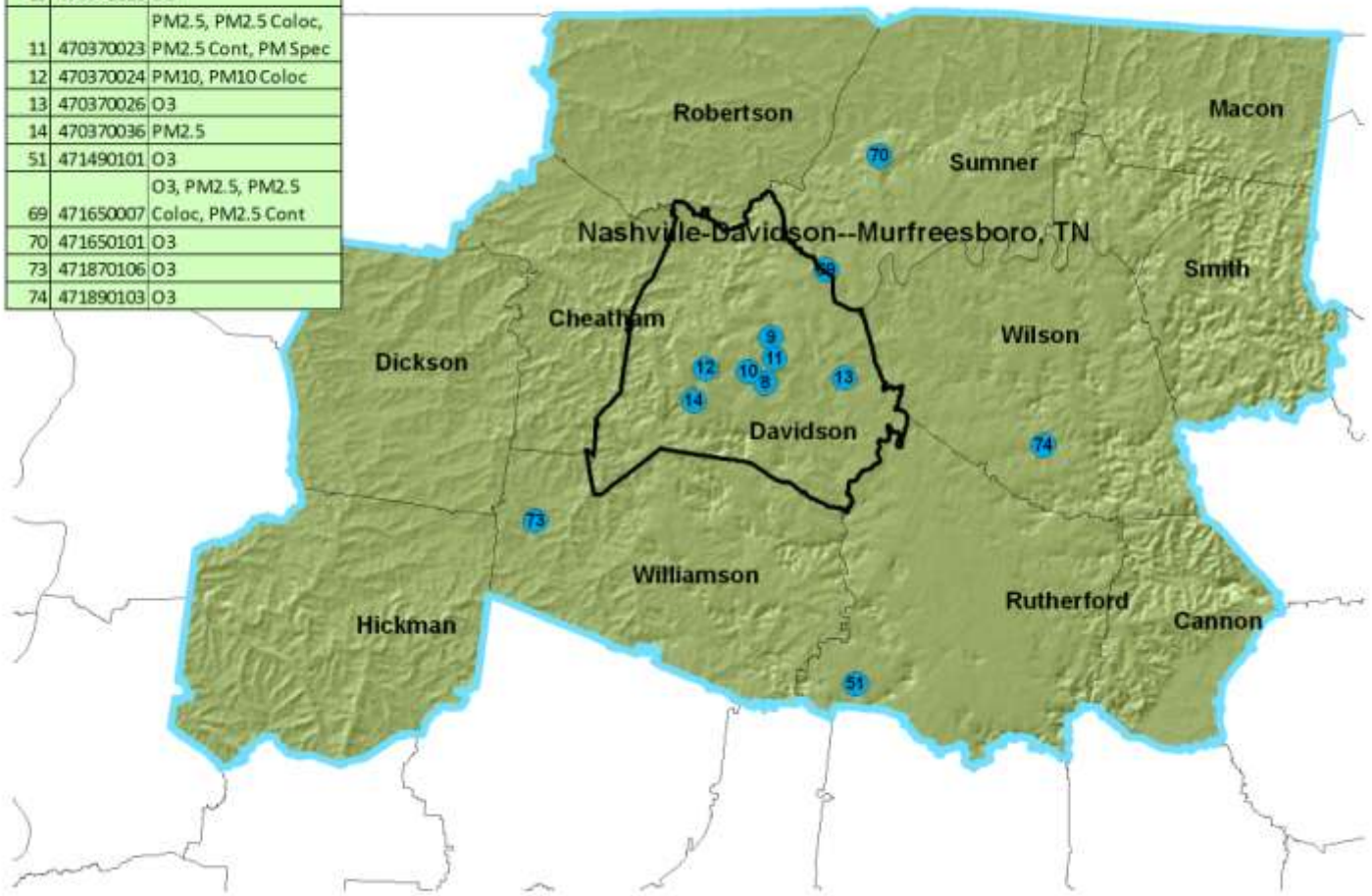
(a) The only required monitors for $PM_{10-2.5}$ are those required at NCore Stations.

4.8.2 $PM_{10-2.5}$ Chemical Speciation Site Requirements.

$PM_{10-2.5}$ chemical speciation monitoring and analyses is required at NCore sites. The selection and modification of these sites must be approved by the Administrator. Samples must be collected using the monitoring methods and the sampling schedules approved by the Administrator.

Nashville-Davidson--Murfreesboro, TN MSA Area

Site	AQSID	Parameter Combined
8	470370002	PM10
9	470370011	SO2, NO2, O3
10	470370021	CO
11	470370023	PM2.5, PM2.5 Coloc, PM2.5 Cont, PM Spec
12	470370024	PM10, PM10 Coloc
13	470370026	O3
14	470370036	PM2.5
51	471490101	O3
69	471650007	O3, PM2.5, PM2.5 Coloc, PM2.5 Cont
70	471650101	O3
73	471870106	O3
74	471890103	O3



Tennessee's Interpretation of Ambient Air Monitors Needed to meet the 40CFR, Part 58 Requirements

Census Area Identification and Population Data			14129 Lead		42101 CO		42401 SO2		42602 NO2		44201 Ozone			81102 PM 10		88101 PM 2.5				88502 PM 2.5 Speciation		88101 or 88501 PM 2.5 Cont	
CBSA Code	Census 2000 /. 2010	CBSA Title (MS Areas)	Operating	Required	Operating	Required	Operating	Required	Operating	Required	Operating	2009 2011 8 Hr DV	Required	Operating	Required	Operating	2009 2011 Annual DV ug/m	2009 2011 24 Hr DV ug/m	Required	Operating	Required	Operating	Required
34980	1311789/ 1589934	Nashville-Davidson-Murfreesboro, TN	0	0	1	1	1	1	1	1	7	0.075	2	3[1]	2	5[1]	10.9	22	2	1	1	2	1

[1] Includes collocated monitor.

The TEOM POC 3 PM2.5 particulate monitors and the speciation POC 5 STN monitors are generally not suited to be used for comparisons to the annual PM2.5 standards.

There are no plans to relocate or shutdown any existing monitoring sites in the MSA area described. The PM_{10} monitor at 470370002 has been temporarily shut down during construction at the site.

An application has been submitted to establish a NO_2 near road monitoring site. No lead monitors are anticipated to be established as there are no sources emitting 0.5 TPY of lead. No additional SO2 monitors are anticipated to be required to be established. An additional CO monitor will be collocated with the near road NO_2 monitor. The need for additional monitoring sites may be met by re-location of existing network sites. Additional monitoring sites will require additional resources for both equipment and operational expenses.

Revisions to the Davidson County portions of the Ambient Monitoring Plan (AMP) provided courtesy of the Metropolitan Health Department/Nashville & Davidson County Air Pollution Control Program.

AQSID	County Name	Monitor Type	Para	Para Name	POC	Int	Year	Collection Frequency	Address	CBSA	Lat	Lon	Mtd	RepOrg	RepOrgName
470370002	Davidson	SLAMS	81102	PM10	1	7	2012	6	LESTER & HART STS	34980	+36.143244	-86.754611	063	0682	Metropolitan Health Department/Nashville & Davidson County
470370011	Davidson	SLAMS	42401	SO2	1	1	2012	Hourly	1015 TRINITY LANE	34980	+36.205000	-86.744722	061	0682	Metropolitan Health Department/Nashville & Davidson County
470370011	Davidson	UNKNOWN	42602	NO2	1	1	2012	Hourly	1015 TRINITY LANE	34980	+36.205000	-86.744722	074	0682	Metropolitan Health Department/Nashville & Davidson County
470370011	Davidson	UNKNOWN	44201	O3	1	1	2012	Hourly	1015 TRINITY LANE	34980	+36.205000	-86.744722	047	0682	Metropolitan Health Department/Nashville & Davidson County
470370021	Davidson	UNKNOWN	42101	CO	1	1	2012	Hourly	700 BROADWAY	34980	+36.159671	-86.781149	054	0682	Metropolitan Health Department/Nashville & Davidson County
470370023	Davidson	SLAMS	88101	PM2.5	1	7	2012	6	105 SOUTH 17TH ST @ LOCKELAND SCHOOL	34980	+36.176326	-86.738902	120	0682	Metropolitan Health Department/Nashville & Davidson County
470370023	Davidson	SLAMS	88101	PM2.5	2	7	2012	6	105 SOUTH 17TH ST @ LOCKELAND SCHOOL	34980	+36.176326	-86.738902	120	0682	Metropolitan Health Department/Nashville & Davidson County
470370023	Davidson	INDEX SITE	88502	PM2.5 Cont	3	1	2012	Hourly	105 SOUTH 17TH ST @ LOCKELAND SCHOOL	34980	+36.176326	-86.738902	717	0682	Metropolitan Health Department/Nashville & Davidson County
470370023	Davidson	SUPLMNTL SPECIATION	88502	PM Spec Carbon	5	7	2012	6	105 SOUTH 17TH ST @ LOCKELAND SCHOOL	34980	+36.176326	-86.738902	810	0682	Metropolitan Health Department/Nashville & Davidson County
470370024	Davidson	SLAMS	81102	PM10	1	7	2012	6	56TH AVE AND LOUISIANA ST	34980	+36.162763	-86.854927	063	0682	Metropolitan Health Department/Nashville & Davidson County
470370024	Davidson	QA COLLOC	81102	PM10	2	7	2012	6	56TH AVE AND LOUISIANA ST	34980	+36.162763	-86.854927	063	0682	Metropolitan Health

AQSID	County Name	Monitor Type	Para	Para Name	POC	Int	Year	Collection Frequency	Address	CBSA	Lat	Lon	Mtd	RepOrg	RepOrgName
		ATED													Department/Nashville & Davidson County
470370026	Davidson	SLAMS	44201	O3	1	1	2012	Hourly	3711 BELL ROAD	34980	+36.150742	-86.623301	047	0682	Metropolitan Health Department/Nashville & Davidson County
470370036	Davidson	SLAMS	88101	PM2.5	1	7	2012	1	400 DAVIDSON RD	34980	+36.118251	-86.873547	120	0682	Metropolitan Health Department/Nashville & Davidson County
471490101	Rutherford	SLAMS	44201	O3	1	1	2012	Hourly	EAGLEVILLE PUCKETT'S FARM	34980	+35.732878	-86.598872	047	1025	Tennessee Division Of Air Pollution Control
471650007	Sumner	SLAMS	44201	O3	1	1	2012	Hourly	ROCKLAND RECREATION AREA-OLD HICKORY DAM	34980	+36.297778	-86.652778	047	1025	Tennessee Division Of Air Pollution Control
471650007	Sumner	SLAMS	88101	PM2.5	1	7	2012	3	ROCKLAND RECREATION AREA-OLD HICKORY DAM	34980	+36.297778	-86.652778	118	1025	Tennessee Division Of Air Pollution Control
471650007	Sumner	SLAMS	88101	PM2.5	2	7	2012	6	ROCKLAND RECREATION AREA-OLD HICKORY DAM	34980	+36.297778	-86.652778	118	1025	Tennessee Division Of Air Pollution Control
471650007	Sumner	SPECIAL PURPOSE	88501	PM2.5 Cont	3	1	2012	Hourly	ROCKLAND RECREATION AREA-OLD HICKORY DAM	34980	+36.297778	-86.652778	716	1025	Tennessee Division Of Air Pollution Control
471650101	Sumner	SLAMS	44201	O3	1	1	2012	Hourly	COTTONTOWN WRIGHT'S FARM	34980	+36.453975	-86.564149	047	1025	Tennessee Division Of Air Pollution Control
471870106	Williamson	SLAMS	44201	O3	1	1	2012	Hourly	FAIRVIEW MIDDLE SCHOOL CROW CUT ROAD	34980	+35.951944	-87.137222	047	1025	Tennessee Division Of Air Pollution Control
471890103	Wilson	SLAMS	44201	O3	1	1	2012	Hourly	CEDARS OF LEBANON STATE PARK	34980	+36.060372	-86.286085	047	1025	Tennessee Division Of Air Pollution Control

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
470370002	Davidson	SLAMS	81102	PM10	GMW Model 1200	GRAVIMETRIC	RFPS-1287-063	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	COMMERCIAL	URBAN AND CENTER CITY	8/22/1969
470370011	Davidson	SLAMS	42401	SO2	DASIBI 4108	ULTRA VIOLET FLUORESCENCE	EQSA-1086-061	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	URBAN AND CENTER CITY	5/1/1970
470370011	Davidson	UNKNOWN	42602	NO2	THERMO ENVIRON. INST. MODEL 42	CHEMILUMINESCENCE	RFNA-1289-074	HIGHEST CONCENTRATION	AREA	NEIGHBORHOOD	RESIDENTIAL	URBAN AND CENTER CITY	5/1/1970
470370011	Davidson	UNKNOWN	44201	O3	THERMO ELECTRON 49	ULTRA VIOLET	EQOA-0880-047	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	URBAN AND CENTER CITY	5/1/1970
470370021	Davidson	UNKNOWN	42101	CO	THERMO ELECTRON 48, 48C, 48i	NONDISPERSIVE INFRARED	RFCA-0981-054	HIGHEST CONCENTRATION	MOBILE	MICROSCALE	COMMERCIAL	URBAN AND CENTER CITY	4/14/1972
470370023	Davidson	SLAMS	88101	PM2.5	Andersen RAAS2.5-300 PM2.5 SEQ	GRAVIMETRIC	RFPS-0598-120	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	INDUSTRIAL	URBAN AND CENTER CITY	1/1/1976
470370023	Davidson	SLAMS	88101	PM2.5	Andersen RAAS2.5-300 PM2.5 SEQ	GRAVIMETRIC	RFPS-0598-120	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	INDUSTRIAL	URBAN AND CENTER CITY	1/1/1976
470370023	Davidson	INDEX SITE	88502	PM2.5 Cont		TEOM Gravimetric 50 deg C		POPULATION EXPOSURE	AREA	NEIGHBORHOOD	INDUSTRIAL	URBAN AND CENTER CITY	1/1/1976
470370023	Davidson	SUPLMNTL SPECIATION	88502	PM Spec Carbon	MetOne Super SASS URG 3000	GRAVIMETRIC		POPULATION EXPOSURE	NULL	NULL	INDUSTRIAL	URBAN AND CENTER CITY	1/1/1976
470370024	Davidson	SLAMS	81102	PM10	GMW Model 1200	GRAVIMETRIC	RFPS-1287-063	HIGHEST CONCENTRATION	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	1/1/1976
470370024	Davidson	QA COLLOCATED	81102	PM10	GMW Model 1200	GRAVIMETRIC	RFPS-1287-063	QUALITY ASSURANCE	NULL	NULL	RESIDENTIAL	SUBURBAN	1/1/1976
470370026	Davidson	SLAMS	44201	O3	THERMO ELECTRON 49	ULTRA VIOLET	EQOA-0880-047	HIGHEST CONCENTRATION	AREA	URBAN SCALE	FOREST	RURAL	1/1/1978
470370036	Davidson	SLAMS	88101	PM2.5	Andersen RAAS2.5-300 PM2.5 SEQ	GRAVIMETRIC	RFPS-0598-120	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	12/1/1998

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
471490101	Rutherford	SLAMS	44201	O3	THERMO ELECTRON 49	ULTRA VIOLET	EQOA-0880-047	POPULATION EXPOSURE	AREA	URBAN SCALE	AGRICULTURAL	RURAL	4/1/1988
471650007	Sumner	SLAMS	44201	O3	THERMO ELECTRON 49	ULTRA VIOLET	EQOA-0880-047	HIGHEST CONCENTRATION	AREA	URBAN SCALE	INDUSTRIAL	RURAL	1/1/1973
471650007	Sumner	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	AREA	URBAN SCALE	INDUSTRIAL	RURAL	1/1/1973
471650007	Sumner	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	UNKNOWN	NULL	NULL	INDUSTRIAL	RURAL	1/1/1973
471650007	Sumner	SPECIAL PURPOSE	88501	PM2.5 Cont		TEOM Gravimetric 50 deg C		POPULATION EXPOSURE	AREA	URBAN SCALE	INDUSTRIAL	RURAL	1/1/1973
471650101	Sumner	SLAMS	44201	O3	THERMO ELECTRON 49	ULTRA VIOLET	EQOA-0880-047	POPULATION EXPOSURE	AREA	URBAN SCALE	AGRICULTURAL	RURAL	4/1/1988
471870106	Williamson	SLAMS	44201	O3	THERMO ELECTRON 49	ULTRA VIOLET	EQOA-0880-047	POPULATION EXPOSURE	NULL	NULL	AGRICULTURAL	RURAL	4/11/1997
471890103	Wilson	SLAMS	44201	O3	THERMO ELECTRON 49	ULTRA VIOLET	EQOA-0880-047	HIGHEST CONCENTRATION	AREA	URBAN SCALE	FOREST	RURAL	5/1/1988

Monitoring Equipment Evaluation MHD/Nashville & Davidson County AMP

2012 – Annual Evaluation of Ambient Monitors Date Reviewed April 17, 2012

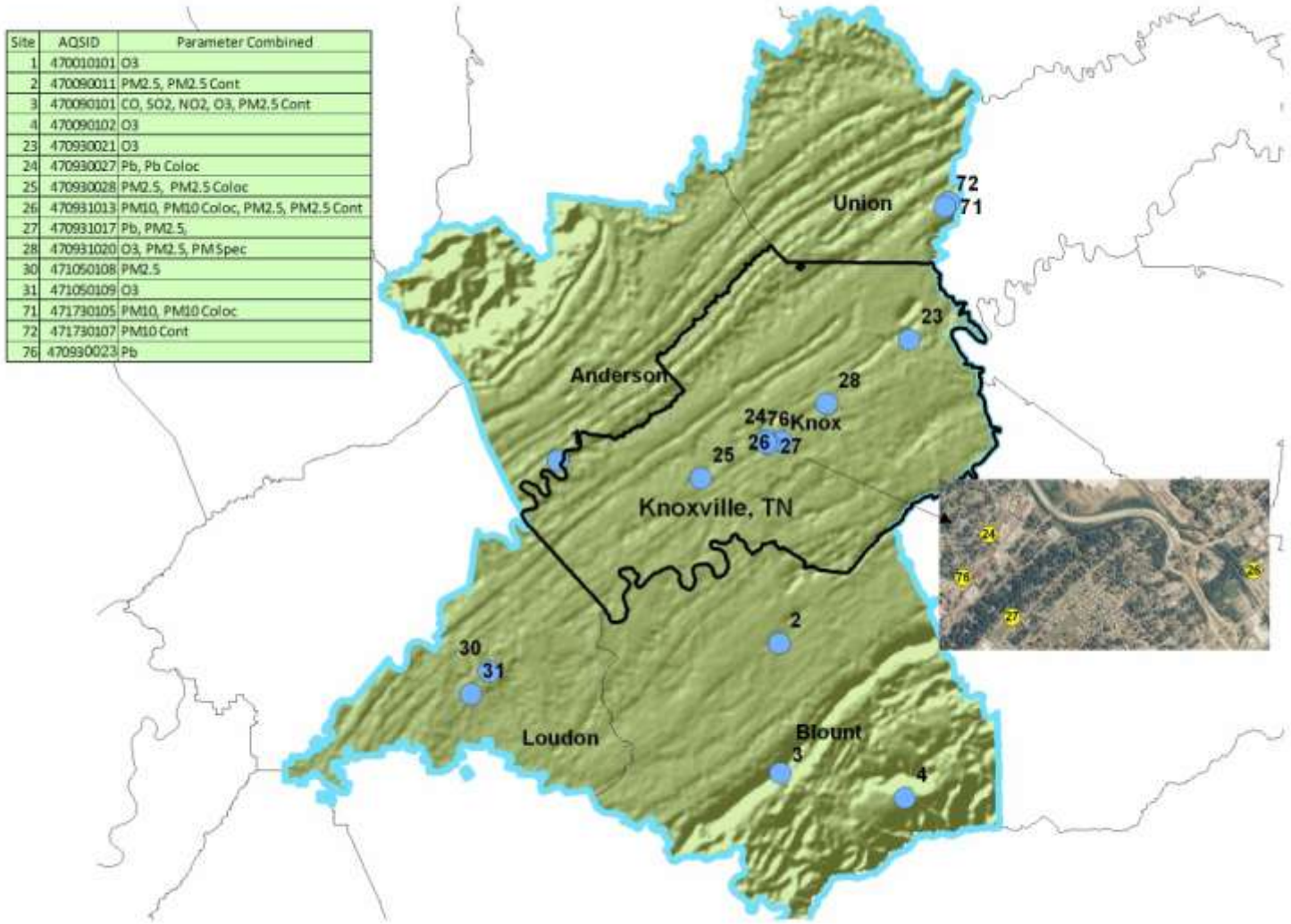
Site No.	Number of Monitors	Pollutant	Equipment Supplier	Model No. Serial No.	Condition	Age (years)	NAMS or SLAMS
470370002	1	PM10	Thermo Andersen	GUV-16H s/n 4199	Good	7	SLAMS
470370011	1	SO2	Dasibi	4108 s/n 1123	Good	10	NAMS
470370011	1	O3	Thermo Instruments	49i s/n CM 09130037	New	1.5	NAMS
470370011	1	NO_2	Thermo Instruments	42C s/n 0425908744	Good	7	SLAMS
470370011	1	Multi-Gas Calibrator	Thermo Instruments	146i s/n 0827732246	Good	2.5	
470370011	1	Zero Air System	Thermo Instruments	Model 111 s/n 0518112050	Good	6	
470370011	1	UV Photometer	Teledyne	703E	Good	1	
470370011	4	Strip Chart Recorders	Texas Instruments	DC01W6A	Fair	17	Used as Backups for Data Retrieval
470370011	1	Data Logger	ESC/Agilaire	8816	Good	12	
470370021	1	CO	Thermo Instruments	48C s/n 0518112051	Good	7	NAMS
470370021	1	Strip Chart Recorder	Texas Instruments	DC01W6A	Fair	17	Used as Backup for Data Retrieval
470370021	1	Data Logger	ESC/Agilaire	8816	Good	12	
470370023	2	PM2.5	Andersen	RAAS 2.5-300 (POC1) s/n 00685 (POC2) s/n 00669	 Good Good	 7 7	SLAMS
470370023	1	PM2.5	R&P	TEOM 2.5 1400A s/n 140AB228519912	Good	12	SLAMS
470370023	1	$PM_{2.5}$ Carbon	URG	3000N Carbon Speciation s/n 00254	Good	3	SLAMS
470370023	1	PM2.5	Met One	SASS PM2.5 Speciation s/n G9191	Good	4	SLAMS
470370023	1	Data Logger	ESC/Agilaire	8816	Good	12	
470370024	2	PM_{10}	Thermo Andersen	GUV-16H			NAMS

				(POC1) s/n P5526 (POC2) s/n P5527	Good Good	7	
470370026	1	O_3	Thermo	49C s/n 0426408746	Good	7	SLAMS
470370026	1	UV Photometer	Columbia Scientific	CSI 3000 s/n 10108	Fair	12	
470370026	1	Zero Air System	Thermo Instruments	Model 111 s/n 0827732247	Good	4	
470370026	1	Data Logger	ESC/Agilaire	8816	Good	12	
470370036	1	$PM_{2.5}$	Andersen	RAAS 2.5-300 s/n 00629	Good	7	SLAMS
AP Lab	1	Data Logger	ESC/Agilaire	8832 s/n A2327K	New	1.5	
AP Lab	1	O3	Thermo	49C s/n 0426408745	Good	10	NAMS
AP Lab	1	CO	Thermo Instruments	48C s/n 0518112052	Good	7	In storage; Can be used as backup monitor
AP Lab	1	PM2.5	R&P	TEOM PM2.5 1400A, s/n 140AB252880408	Good	7	In storage; Can be used as backup monitor
AP Lab	2	O3	Dasibi	1008-RS s/n 6861 and 6771	Fair	14	In storage
AP Lab	1	SO2	Dasibi	4108 s/n 629	Fair	19	In storage; Can be used as backup monitor
AP Lab	3	CO	Dasibi	3008 s/n 1160, 1161 and 907	Fair	12	In storage
AP Lab	2	Toxics/ Carbonyls	ATEC	Model 2200 s/n 21131 and 21130	Good	10	In Storage
AP Lab	4	TSP/ Category V Metals	Andersen	Model G10557TSP	Good	9	In Storage
AP Lab	1	PM_{10}	Thermo Andersen	GUV-16H s/n 4204	Good	7	Can be used as a replacement sampler
AP Lab	1	NO_2	API	200A s/n 968	Poor	13	In storage
AP Lab	4	$PM_{2.5}$	Andersen	RAAS 2.5-300 s/n 00209, 00213, 00205, and 00510	Poor	14	Used for spare parts
AP Lab	2	$PM_{2.5}$	Andersen	RAAS 2.5-300 s/n 00666 and 00667	Good	7	In storage; Can be used as backup samplers

AP Lab	2	Data Logger	ESC	8816 s/n 3747 and 1390	Good	12	In storage
AP Lab	3	Photometer	Columbia	Photocal 3000 s/n 11049, 10198 and 11051	Good	12	In storage
AP Lab	1	CO	Dasibi	3003 s/n 846	Fair	15	In storage
AP Lab	1	NOx	Thermo	42i s/n 1105247201	Good	3	In storage
AP Lab	1	PM2.5	Thermo	2025 s/n 2025B222960806	Good	4	In storage
AP Lab	1	Photometer	Columbia	3100 s/n 15246	Good	23	In storage

Knoxville, TN Area

Site	AQSID	Parameter Combined
1	470010101	O3
2	470090011	PM2.5, PM2.5 Cont
3	470090101	CO, SO2, NO2, O3, PM2.5 Cont
4	470090102	O3
23	470930021	O3
24	470930027	Pb, Pb Coloc
25	470930028	PM2.5, PM2.5 Coloc
26	470931013	PM10, PM10 Coloc, PM2.5, PM2.5 Cont
27	470931017	Pb, PM2.5,
28	470931020	O3, PM2.5, PM Spec
30	471050108	PM2.5
31	471050109	O3
71	471730105	PM10, PM10 Coloc
72	471730107	PM10 Cont
76	470930023	Pb



Tennessee's Interpretation of Ambient Air Monitors Needed to meet the 40CFR, Part 58 Requirements

Census Area Identification and Population Data			14129 Lead		42101 CO		42401 SO2		42602 NO2		44201 Ozone			81102 PM 10		88101 PM 2.5				88502 PM 2.5 Speciation		88101 or 88501 PM 2.5 Cont	
CBSA Code	Census 2000 /. 2010	CBSA Title (MS Areas)	Operating	Required	Operating	Required	Operating	Required	Operating	Required	Operating	2009 2011 8 Hr DV	Required	Operating	Required	Operating	2009 2011 Annual DV ug/m	2009 2011 24 Hr DV ug/m	Required	Operating	Required	Operating	Required
28940	616079/ 698030	Knoxville, TN	4[1]	2	1	0	1	1	1	0	6	0.077	2	5[1]	2	7[1]	12.3	24	1	1	1	3	1

[1] Includes collocated monitor.

The TEOM POC 3 PM2.5 particulate monitors and the speciation POC 5 STN monitors are generally not suited to be used for comparisons to the annual PM2.5 standards.

The collocated PM2.5 monitor at site 47-093-1017 was relocated to site 47-093-0028 on April 11, 2011 with EPA's approval. This collocated sampler will operate on a 6-day schedule.

Due to Gerdau's (formally known as Gerdau Ameristeel) proposed right of way closures, the lead monitor at (47-093-0023) would need to be relocated to the new right-of-way. Agency is working with EPA Region 4 to identify an acceptable monitoring site. An SO2 monitoring site is needed to be established to meet the PWEI requirements. Although an SO2 monitor is operating at the NCORE site, it may not meet the PWEI requirements. If not, a new monitoring site will be established to meet the January 1, 2013 monitoring deadline.

The need for additional monitoring sites may be met by re-location of existing network sites. Additional monitoring sites will require additional resources for both equipment and operational expenses.

Revisions to the Knox County portions of the AMP provided courtesy of the Knox County Department of Air Quality Management.

AQSID	County Name	Monitor Type	Para	Para Name	POC	Int	Year	Collection Frequency	Address	CBSA	Lat	Lon	Mtd	RepOrg	RepOrgName
470930021	Knox	SLAMS	44201	O3	1	1	2012	Hourly	9315 RUTLEDGE PIKE MASCOT TN 37806	28940	+36.085508	-83.764806	047	0581	Knox County Department Of Air Quality Management
470930027	Knox	SLAMS	14129	Pb	1	7	2012	6	2522 BURNSIDE ST KNOXVILLE TN 37921	28940	+35.983056	-83.952253	107	0581	Knox County Department Of Air Quality Management
470930027	Knox	SLAMS	14129	Pb	2	7	2012	6	2522 BURNSIDE ST KNOXVILLE TN 37921	28940	+35.983056	-83.952253	107	0581	Knox County Department Of Air Quality Management
470930028	Knox	SLAMS	88101	PM2.5	1	7	2012	1	1000 FRANCIS ROAD	28940	+35.944601	-84.035980	145	0581	Knox County Department Of Air Quality Management
470930028	Knox	QA Collocated	88101	PM2.5	2	7	2012	1	1000 FRANCIS ROAD	28940	+35.944601	-84.035980	145	0581	Knox County Department Of Air Quality Management
470931013	Knox	SLAMS	81102	PM10	1	7	2012	6	1403 DAVANNA STREET Knoxville, Tn 37917	28940	+35.980421	-83.932814	064	0581	Knox County Department Of Air Quality Management
470931013	Knox	QA Collocated	81102	PM10	2	7	2012	6	1403 DAVANNA STREET Knoxville, Tn 37917	28940	+35.980421	-83.932814	064	0581	Knox County Department Of Air Quality Management
470931013	Knox	SPECIAL PURPOSE	88101	PM2.5	1	7	2012	6	1403 DAVANNA STREET Knoxville, Tn 37917	28940	+35.980421	-83.932814	145	0581	Knox County Department Of Air Quality Management
470931013	Knox	SPECIAL PURPOSE	88501	PM2.5 Cont	3	1	2012	Hourly	1403 DAVANNA STREET Knoxville, Tn 37917	28940	+35.980421	-83.932814	716	0581	Knox County Department Of Air Quality Management
470931017	Knox	SLAMS	14129	Pb	1	7	2012	6	1613 VERMONT AVENUE	28940	+35.978074	-83.950666	107	0581	Knox County Department Of Air Quality Management
470931017	Knox	SLAMS	88101	PM2.5	1	7	2012	1	1613 VERMONT AVENUE	28940	+35.978074	-83.950666	145	0581	Knox County Department Of Air Quality Management
470931020	Knox	SLAMS	44201	O3	1	1	2012	Hourly	4625 MILDRED DRIVE	28940	+36.019186	-83.873810	047	0581	Knox County Department Of Air Quality Management
470931020	Knox	SLAMS	88101	PM2.5	1	7	2012	1	4625 MILDRED DRIVE	28940	+36.019186	-83.873810	145	0581	Knox County Department Of Air Quality Management
470931020	Knox	SUPLMNTL SPECIATION	88502	PM Spec Carbon	5	7	2012	6	4625 MILDRED DRIVE	28940	+36.019186	-83.873810	810	0581	Knox County Department Of Air Quality Management
470930023	Knox	SLAMS	14129	Pb	1	7	2012	6	1584 ELY AVENUE	28940	+35.98049	-83.95422	107	0581	Knox County Department Of Air Quality Management
470090101	Blount	NON-EPA FEDERAL	44201	O3	1	1	2012	Hourly	GREAT SMOKY MOUNTAINS NP	28940	+35.631490	-83.943512	047	0745	National Park Service

AQSID	County Name	Monitor Type	Para	Para Name	POC	Int	Year	Collection Frequency	Address	CBSA	Lat	Lon	Mtd	RepOrg	RepOrgName
									LOOK ROCK						
470010101	Anderson	SLAMS	44201	O3	1	1	2012	Hourly	FREELS BEND_STUDY AREA MELTON LAKE	28940	+35.963273	-84.223234	087	1025	Tennessee Division Of Air Pollution Control
470090011	Blount	SPECIAL PURPOSE	88101	PM2.5	1	7	2012	3	2007 SEQUOYAH AVENUE	28940	+35.768431	-83.942123	118	1025	Tennessee Division Of Air Pollution Control
470090011	Blount	SPECIAL PURPOSE	88501	PM2.5 Cont	3	1	2012	Hourly	2007 SEQUOYAH AVENUE	28940	+35.768431	-83.942123	716	1025	Tennessee Division Of Air Pollution Control
470090101	Blount	SPECIAL PURPOSE	88501	PM2.5 Cont	3	1	2012	Hourly	GREAT SMOKY MOUNTAINS NP LOOK ROCK	28940	+35.631490	-83.943512	703	1025	Tennessee Division Of Air Pollution Control
470090102	Blount	NON-EPA FEDERAL	44201	O3	1	1	2012	Hourly	GREAT SMOKY MOUNTAINS NP - CADES COVE	28940	+35.603056	-83.783611	053	1025	Tennessee Division Of Air Pollution Control
471050108	Loudon	SPECIAL PURPOSE	88101	PM2.5	1	7	2012	3	130 WEBB DRIVE	28940	+35.744799	-84.317313	118	1025	Tennessee Division Of Air Pollution Control
471050109	Loudon	SPECIAL PURPOSE	44201	O3	1	1	2012	Hourly	1703 ROBERTS RD	28940	+35.720932	-84.341581	087	1025	Tennessee Division Of Air Pollution Control
471730107	Union	SPECIAL PURPOSE	81102	PM10 Cont	1	1	2012	Hourly	DONAHUE PROPERTY ON DONAHUE ROAD	28940	+36.224167	-83.714444	079	1025	Tennessee Division Of Air Pollution Control
471730105	Union	INDUSTRIAL	81102	PM10	1	7	2012	6	LUTTRELL SMITH HOUSE DONAHEW RD.	28940	+36.228145	-83.709615	063	1027	Tennessee Luttrell Lime
471730105	Union	INDUSTRIAL	81102	PM10	2	7	2012	6	LUTTRELL SMITH HOUSE DONAHEW RD.	28940	+36.228145	-83.709615	063	1027	Tennessee Luttrell Lime
470090101	Blount	SPECIAL PURPOSE	42101	CO	2	1	2012	Hourly	GREAT SMOKY MOUNTAINS NP LOOK ROCK	28940	+35.631490	-83.943512	055	1029	Tennessee Valley Authority
470090101	Blount	SPECIAL PURPOSE	42401	SO2	2	1	2012	Hourly	GREAT SMOKY MOUNTAINS NP LOOK ROCK	28940	+35.631490	-83.943512	560	1029	Tennessee Valley Authority
470090101	Blount	SPECIAL PURPOSE	42602	NO2	3	1	2012	Hourly	GREAT SMOKY MOUNTAINS NP LOOK ROCK	28940	+35.631490	-83.943512	599	1029	Tennessee Valley Authority

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
470930021	Knox	SLAMS	44201	O3	Teledyne 400E	ULTRA VIOLET	EQOA-0992-087047	HIGHEST CONCENTRATION	NULL	URBAN SCALE	AGRICULTURAL	RURAL	6/1/1981
470930027	Knox	SLAMS	14129	Pb	PB-TSP/FLAMELESS AA	Flameless Atomic absorption (GFAA); 3M HNO3 Boil 30 min	EQL-0895-107	SOURCE ORIENTED	POINT	NEIGHBORHOOD	INDUSTRIAL	URBAN AND CENTER CITY	12/4/1994
470930027	Knox	SLAMS	14129	Pb	PB-TSP/FLAMELESS AA	Flameless Atomic absorption (GFAA); 3M HNO3 Boil 30 min	EQL-0895-107	SOURCE ORIENTED	POINT	NEIGHBORHOOD	INDUSTRIAL	URBAN AND CENTER CITY	12/4/1994
470930028	Knox	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	MOBILE	NEIGHBORHOOD	MOBILE	SUBURBAN	1/1/1999
470930028	Knox	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	MOBILE	NEIGHBORHOOD	MOBILE	SUBURBAN	1/1/1999
470931013	Knox	SLAMS	81102	PM10	SIERRA-ANDERSEN/GMW 321-B	GRAVIMETRIC	RFPS-1287-064	POPULATION EXPOSURE	MOBILE	NEIGHBORHOOD	MOBILE	URBAN AND CENTER CITY	1/1/1975
470931013	Knox	SPECIAL PURPOSE	81102	PM10	SIERRA-ANDERSEN/GMW 321-B	GRAVIMETRIC	RFPS-1287-064	POPULATION EXPOSURE	MOBILE	NEIGHBORHOOD	MOBILE	URBAN AND CENTER CITY	1/1/1975
470931013	Knox	SPECIAL PURPOSE	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	MOBILE	MIDDLE SCALE	MOBILE	URBAN AND CENTER CITY	1/1/1975
470931013	Knox	SPECIAL PURPOSE	88501	PM2.5 Cont		TEOM Gravimetric 50 deg C		POPULATION EXPOSURE	MOBILE	MIDDLE SCALE	MOBILE	URBAN AND CENTER CITY	1/1/1975
470931017	Knox	SLAMS	14129	Pb	PB-TSP/FLAMELESS AA	Flameless Atomic absorption (GFAA); 3M HNO3 Boil 30 min	EQL-0895-107	POPULATION EXPOSURE	NULL	NULL	RESIDENTIAL	URBAN AND CENTER CITY	4/1/1978
470931017	Knox	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	MOBILE	NEIGHBORHOOD	RESIDENTIAL	URBAN AND CENTER CITY	4/1/1978
470931020	Knox	SLAMS	44201	O3	Teledyne 400E	ULTRA VIOLET	EQOA-0992-087047	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	MOBILE	SUBURBAN	1/1/1981
470931020	Knox	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM	GRAVIMETRIC	RFPS-0498-	POPULATION EXPOSURE	MOBILE	NEIGHBORHOOD	MOBILE	SUBURBAN	1/1/1981

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
					SEQ		118						
470931020	Knox	SUPLMNTL SPECIATION	88502	PM Spec Carbon	MetOne Super SASS URG 3000	Gravimetric		POPULATION EXPOSURE	NULL	NULL	MOBILE	SUBURBAN	1/1/1981
470930023	Knox	SLAMS	14129	Pb	PB-TSP/FLAMELESS AA	Flameless Atomic absorption (GFAA); 3M HNO3 Boil 30 min	EQL-0895-107	POPULATION EXPOSURE	POINT	NULL	RESIDENTIAL	URBAN AND CENTER CITY	4/1/1978
470090101	Blount	NON EPA FEDERAL	44201	O3	THERMO ELECTRON 49	ULTRA VIOLET	EQOA-0880-047	UNKNOWN	AREA	NEIGHBORHOOD	FOREST	RURAL	1/1/1980
470010101	Anderson	SLAMS	44201	O3	API MODEL 400 OZONE ANALYZER	ULTRA VIOLET ABSORPTION	EQOA-0992-087	POPULATION EXPOSURE	AREA	URBAN SCALE	FOREST	RURAL	4/1/1992
470090011	Blount	SPECIAL PURPOSE	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	5/1/2000
470090011	Blount	SPECIAL PURPOSE	88501	PM2.5 Cont		TEOM Gravimetric 50 deg C		POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	5/1/2000
470090101	Blount	SPECIAL PURPOSE	88501	PM2.5 Cont		TEOM Gravimetric 30 deg C		REGIONAL TRANSPORT	AREA	REGIONAL SCALE	FOREST	RURAL	1/1/1980
470090102	Blount	NON-EPA FEDERAL	44201	O3	MONITOR LABS 8810	ULTRA VIOLET	EQOA-0881-053	HIGHEST CONCENTRATION	NULL	REGIONAL SCALE	FOREST	RURAL	5/1/1994
471050108	Loudon	SPECIAL PURPOSE	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	8/1/2003
471050109	Loudon	SPECIAL PURPOSE	44201	O3	API MODEL 400 OZONE ANALYZER	ULTRA VIOLET ABSORPTION	EQOA-0992-087	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	2/1/2006
471730107	Union	SPECIAL PURPOSE	81102	PM10 Cont	RUPRCHT&PATSHNCK TEOM SER 1400	TEOM-GRAVIMETRIC	EQPM-1090-079	UNKNOWN	NULL	NULL	AGRICULTURAL	RURAL	10/25/1996
471730105	Union	INDUSTRIAL	81102	PM10	GMW Model 1200	GRAVIMETRIC	RFPS-1287-063	UNKNOWN	POINT	NULL	AGRICULTURAL	RURAL	3/1/1984
471730105	Union	INDUSTRIAL	81102	PM10	GMW Model 1200	GRAVIMETRIC	RFPS-1287-063	UNKNOWN	POINT	NULL	AGRICULTURAL	RURAL	3/1/1984
470090101	Blount	SPECIAL PURPOSE	42101	CO		Gas Filter Correlation Thermo Electron 48C-TL		UNKNOWN	NULL	NULL	FOREST	RURAL	1/1/1980
470090101	Blount	SPECIAL PURPOS	42401	SO2	Thermo Electron 43c-TLE/43i-TLE	Pulsed Fluorescent	EQSA-0486-	UNKNOWN	NULL	NULL	FOREST	RURAL	1/1/1980

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
		E				43C-TLE/43i-TLE	060						
470090101	Blount	SPECIAL PURPOSE	42602	NO2		Chemiluminescence Teledyne API 200 EU/501w/photolytic converter		GENERAL/BACKGROUND	NULL	NULL	FOREST	RURAL	1/1/1980

Monitoring Equipment Evaluation Knox County Department of Air Quality Management AMP

Knox County Air Quality Management Equipment Inventory 2012

Completed: 04/16/2012 by Amber Talgo

Location	Description	Manufacturer Model	Serial Number	Condition	Put in service	Comments:
Air Lab Site: 47-093-1013	PM 2.5 Continuous	TEOM 1405	SN 1405A209531006	Good Condition	2011	
	PM 2.5 Sequential	Thermo Partisol Plus 2025	SN B**225760**909	Good Condition	2010	
	Data Logger	ESC 8832	SN A3760K	Good Condition	2010	
	PM 10 Hi-Vol	Andersen/GMW	SN P3084	Good Condition	Unknown	
	PM 10 Hi-Vol	Andersen/GMW	SN P999	Good Condition	Unknown	
Rule Site: 47-093-1017	PM 2.5 Sequential	Thermo Partisol Plus 2025	SN B**218950**606	Moderate Condition	2007	To be replaced with new spare
	TSP Hi-Vol	General Metal Works	SN P1938	Good Condition	Unknown	
Burnside Site: 47-093-0027	TSP Hi-Vol	General Metal Works	SN P2875	Good Condition	Unknown	
	TSP Hi-Vol	General Metal Works	SN P3085	Good Condition	Unknown	
Ameristeel Site: 47-093-0023	TSP Hi-Vol	General Metal Works	SN P04304	Good Condition	Unknown	
Bearden Site: 47-093-0028	PM 2.5 Sequential	Thermo Partisol Plus 2025	SN B**218930**606	Good Condition	2007	
	PM 2.5 Sequential	Thermo Partisol Plus 2025	SN B**218940**606	Good Condition	2007	
Spring Hill Site: 47-093-1020	PM 2.5 Sequential	Thermo Partisol Plus 2025	SN B**218980**606	Good Condition	2007	
	Carbon Sampler	URG 3000N	SN 3N-B0285	Good Condition	2007	
	PM 2.5 Speciation	Met One Super SASS	SN G9188	Good Condition	2008	
	Ozone Analyzer	Teledyne / API 400E	2013	Good Condition	2009	
	Ozone Calibrator	Teledyne / API 703E	190	Good Condition	2009	
	Data Logger	ESC 8832	A 3758 K	Good Condition	2010	
	Gist (pump for 0 air)	DOA-P704-AA	0611014883	Good Condition	2011	
East Knox Site: 47-093-0021	Ozone Analyzer	Teledyne / API 400E	2259	Good Condition	2009	
	Ozone Calibrator	Teledyne / API 703E	189	Good Condition	2009	
	Data Logger	ESC 8832	A 3757 K	Good Condition	2010	
	Gist (pump for 0 air)	DOA-P704-AA	0611014884	Good Condition	2011	
Back-up equipment (located at the Air Lab)	Ozone Analyzer	Teledyne / API 400E	2014	Good Condition	2009	
	Ozone Analyzer	Teledyne / API 400E	2697	Good Condition	2011	Bench standard
	Ozone Calibrator	Teledyne / API 703E	187	Good Condition	2009	
	Ozone Calibrator	Teledyne / API 703E	188	Good Condition	2009	
	Data Logger	ESC 8832	A 3759 K	Good Condition	2010	
	Gist (pump for 0 air)	DOA-P704-AA	0611013627	Good Condition	2011	For Audit use
	Thermo Environmental Inst. Gist (compressor)	111 1HAB-11T-M100X	111-46018-275 '0993	Fair Condition	Unknown	
	PM 2.5 Sequential	Thermo Partisol Plus 2025	SN B**218920**606	Good Condition	2007	
	PM 2.5 Sequential	Thermo Partisol Plus 2026	SN B**26451**005	Good Condition	New	
	Hi-Vol Orifice	Anderson/GMW	P4302	Good Condition	Unknown	
	Hi-Vol Orifice	Anderson/GMW	P3619	Good Condition	Unknown	
	Hi-Vol Orifice	Anderson/GMW	P2861	Good Condition	Unknown	
	Hi-Vol Orifice	Anderson/GMW	P4306	Good Condition	Unknown	
	Hi-Vol Orifice	Anderson/GMW	P3927	Good Condition	Unknown	
	PM 10 inlet head for Hi-Vol	Anderson/GMW	3555	Good Condition	Unknown	
	PM 10 inlet head for Hi-Vol	Anderson/GMW	3874	Good Condition	Unknown	in mosquito garage
	PM 10 inlet head for Hi-Vol	Anderson/GMW	3079	Good Condition	Unknown	in mosquito garage
	PM 10 inlet head for Hi-Vol	Anderson/GMW	1536	Poor Condition	Unknown	in mosquito garage
Discontinued / Out of Service (located at Air Lab)	SO_2 Analyzer	Thermo 43A	43A-39269-262	Unknown	N/A	
	Gas calibrator	Thermo 146	146-45988-275	Unknown	N/A	
	BIOS (Air Pro Sentry II)	SR-24-6-115A	SR 50018	Unknown	N/A	
	BIOS (Air Pro Sentry II)	SR-24-6-115A	SR 50019	Unknown	N/A	
	PM 2.5 Sequential	Anderson- RAAS	RAAS2.5-300-00124	Non-working Condition	N/A	Mostly disassembled
	PM 2.5 Sequential	Anderson- RAAS	RAAS2.5-300-00166	Non-working Condition	N/A	Mostly disassembled
	PM 2.5 Sequential	Anderson- RAAS	RAAS2.5-300-00497	Poor Condition	N/A	
	PM 2.5 Sequential	Anderson- RAAS	RAAS2.5-300-00137	Non-working Condition	N/A	Mostly disassembled
	PM 2.5 Sequential Speciation	Anderson- RAAS	RAAS2.5-401-00264	Non-working Condition	N/A	Mostly disassembled
	PM 2.5 Sequential Speciation	Anderson- RAAS	RAAS2.5-401-00025	Non-working Condition	N/A	Mostly disassembled
	Ozone analyzer	Thermo 49	49-50547-285	???	N/A	
	Ozone analyzer	Thermo 49	49-29875-237	???	N/A	
	Ozone Calibrator	Thermo 49CPS	49CPS-55290-303	???	N/A	Bench Standard
	Zero Air Supply	ESC 116-7700P	0139	Non-working Condition	N/A	Mostly disassembled
	Zero Air Supply	ESC 116-7700P	0142	Non-working Condition	N/A	Mostly disassembled

NCore Look Rock Monitoring Site

Air quality monitoring at the Look Rock monitoring site has a long history dating at least back to about 1980. Monitoring at this site has been a joint effort of the National Park Service (NPS) Tennessee Valley Authority (TVA) and the State of Tennessee.

Siting

The coordinates are:
Latitude + 35.6334N
Longitude -83.9416W
Elevation 801 Meters.

Site is approved by the EPA as a rural NCore site.

Monitoring Objective

Determine compliance with NAAQS; observe pollution trends for national data analysis, provide pollution levels for daily index reporting; and provide date for scientific studies.

Quality Assurance

All Quality Assurance procedures shall be implemented in accordance with 40 CFR 58, Appendix A.

Area of Representativeness

40 CFR Part 58 Appendix D provides design criteria for ambient air monitoring. In the case of urban NCore the spatial scales to be used are neighborhood and urban. Because the Look Rock site is located in a pristine high elevation area, it is understood that the site is ideally suited for both background and transport related measurements..

Spatial Scales for Each Pollutant

Generally regional scale.

Need For Additional Resources

All parties agree that the collaboration between the National Park Service, TVA and the State of Tennessee at the Look Rock sampling site has produced an extraordinarily diverse and in-depth air quality record and that the bulk of this data set has been validated and reported to the U.S. EPA AQS repository. However, under the present piecemeal funding by the various agencies, there is no assurance that this will continue at the site for the longer term needed for monitoring compliance with the PM NAAQS and with the regional haze rule (RHR). What is needed is a long-term commitment by EPA to coordinate the operation of this and other sites to maintain quality and relevance in the NCore network over the long term. This commitment should commence by the 2011 time frame when NCore sites are expected to become fully operational.


Looking North


Looking West


2011 View of Look Rock Site


Looking East


Looking South

Current TVA Air Monitoring at Look Rock

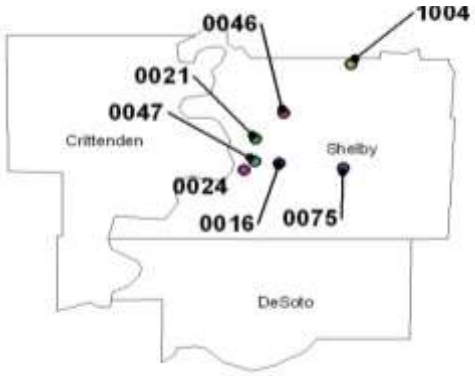
Updated by Solomon T. Bairai, March 14, 2012

POLLUTANT / INSTRUMENT	ANALYSIS METHOD	SAMPLING / REPORTING FREQ	AQS CODE	PARA METER CODE	POC	REP ORG CODE	DATE SAMPLING BEGAN	MONITOR		SAMPLING INSTRUMENT NAME AND DESIGNATION	FED AGENCY
								Type	Comment		
Sulfur dioxide (SO2) trace-level	Pulsed fluorescence	Continuous/ 1 hour	47-009-0101	42401	2	1029	20070401	Special Purpose	NCore	Thermo SO2 43i-TLE EQSA-0486-060	TVA
Carbon monoxide (CO)	trace-level NDIR-GFC	Continuous/ 1 hour	47-009-0101	42101	2	1029	20070401	Special Purpose	NCore	Thermo CO-48i TLE RFCA-0981-054	TVA
[1]Nitrogen oxide (NO) trace-level	Chemilumine-scence with molybdenum converter	Continuous/ 1 hour	47-009-0101	42601	2	1029	20070401	Special Purpose	NCore	Thermo NO/NOy 42C TLE RFNA-1289-074	TVA
[1]Total reactive nitrogen (NOy) trace-level	Chemilumine-scence with molybdenum converter	Continuous/ 1 hour	47-009-0101	42603	2	1029	20070401	Special Purpose	NCore	Thermo NO/NOy 42C TLE RFNA-1289-074	TVA
[1]Nitrogen oxide (NO) trace-level	Chemilumine-scence with photolytic converter	Continuous/ 1 hour	47-009-0101	42601	3	1029	20081001	Special Purpose	NCore	Teledyne NO/NO2/NOx 200EU with photolytic converter	TVA
[1]Nitrogen dioxide (NO2) trace-level	Chemilumine-scence with photolytic converter	Continuous/ 1 hour	47-009-0101	42602	3	1029	20081001	Special Purpose	NCore	Teledyne NO/NO2/NOx 200EU with photolytic converter	TVA
[1]Oxides of Nitrogen (NOx) trace-level	Chemilumine-scence with photolytic converter	Continuous/ 1 hour	47-009-0101	42603	3	1029	20081001	Special Purpose	NCore	Teledyne NO/NO2/NOx 200EU with photolytic converter	TVA
[1]Black carbon PM2.5 LC	Optical absorption	Continuous/ 1 hour	47-009-0101	88313	2	1029	20061001	Special Purpose	NCore	Magee Scientific AE21 Dual beam (BC/UV)	TVA
[1]Sulfate PM2.5 LC	Thermal reduction/ Pulsed fluorescence	Continuous/ 1 hour	47-009-0101	88403	2	1029	20061108	Special Purpose	NCore	Thermo Model 5020	TVA
PM2.5 Mass	Beta Attenuation	1 hour	47-009-0101	88101	NA	1029	20110128	Special purpose	NCore	BAM-1020	TVA
PM10 Mass	Beta Attenuation	1 hour	47-009-0101	81102	NA	1029	20110128	Special purpose	NCore	BAM-1020	TVA
[1]Calibrator	NA	Daily	NA	NA	NA	NA	20070401	NA	NA	Thermo Model 146C	TVA
[1]Zero Air Supply	NA	NA	NA	NA	NA	NA	20070401	NA	NA	Thermo 111	TVA
[1]Telemetry-Data Logger	NA	1 minute/1 hour	NA	NA	NA	NA	20070401	NA	NA	ESC 8832	TVA

Memphis, TN-MS-AR Area

AQS ID	Pollutant	Parameter	ROC*	Latitude	Longitude	Address	CBSA 2003 Title
47-157-0016	PM 10 (Collocated)	81102	0673	+35.165636	-89.970810	1060 Tupelo (Gas Service Center)	Memphis, TN-MS-AR
47-157-0021	Ozone	44201	0673	+35.217501	-90.019707	1330 Frayser	Memphis, TN-MS-AR
47-157-0024	CO, PM 2.5 Continuous, PM 2.5 Speciation	42101, 88502	0673	+35.151194	-90.041559	416 Alabama	Memphis, TN-MS-AR
47-157-0046	SO2, PM 10	42401, 81102	0673	+35.273460	-89.961217	3065 Fite Rd.	Memphis, TN-MS-AR
47-157-0047	PM 2.5 (Collocated)	88101	0673	+35.168894	-90.021537	1064 Breedlove (Guthrie Clinic)	Memphis, TN-MS-AR
47-157-0075	NCORE: CO (trace), NOY, O_3, Pb, PM 2.5, PM 2.5 Continuous., PM 2.5 Speciation, PM 10 lo vol, PM 10-2.5,SO2 (trace), Wind Speed, Wind Direction, Temp, % Relative Humidity, Barometric Pressure	42101, 42600, 44201, 12128, 88101, 88502, 88502, 85101, 86101, 42401, 61101, 61102, 62101, 62201, 64101	0673	+35.151699	-89.850249	6388 Haley Rd. (Shelby Farms)	Memphis, TN-MS-AR
47-157-1004	Ozone	44201	0673	+35.378047	-89.834387	6855 Mudville Rd. (Edmund Orgill Park)	Memphis, TN-MS-AR

*Reporting Organization Code
0673 Memphis/Shelby County Health Department



Tennessee's Interpretation of Ambient Air Monitors Needed to meet the 40CFR, Part 58 Requirements

Census Area Identification and Population Data			14129 Lead		42101 CO		42401 SO2		42602 NO2		44201 Ozone			81102 PM 10		88101 PM 2.5				88502 PM 2.5 Speciation		88101 or 88501 PM 2.5 Cont	
CBSA 2003 Code	Census 2000 / 2010	CBSA 2003 Title (MS Areas)	Operating	Required	Operating	Required	Operating	Required	Operating	Required	Operating	2009 2011 8 Hr DV	Required	Operating	Required	Operating	2009 2011 Annual DV ug/m^3	2009 2011 24 Hr DV ug/m^3	Required	Operating	Required	Operating	Required
32820	1205204/ 1316100	Memphis, TN-MS-AR	1	1	2[3]	1	2[3]	1	1[1,4]	1	3	0.074 Frayser	2	3[2]	2 - 4	2[1,2]	10.4 Guthrie	23 Guthrie	2	2	1	2	1 - 2

[1]The Memphis and Shelby County Health Department and the states of Arkansas and Mississippi have implemented a joint MOA that provides for meeting the MSA monitoring requirements for the combined MSA area. See Appendix 2 for the monitoring agreement.
[2]Includes collocated monitor.
[3]Includes trace level analyzer.
[4]Monitor located in Marion, Arkansas just to the northwest of downtown Memphis.

The TEOM POC 3 PM2.5 particulate monitors and the speciation POC 5 STN monitors are generally not suited to be used for comparisons to the annual PM2.5 standards.

*Shelby County Health Department is in the Second Phase of the Core Based Statistical Area Near Road NO_2 monitoring. The station will include equipment for multi-pollutant monitoring also. No Additional SO2 monitors are anticipated to be required to be established but the monitor at Fite Rd. is under consideration to be eliminated in order to reduce costs. The need for additional monitoring sites may be met by the relocation of existing network sites. Additional monitoring sites will require additional resources for both equipment and operational expenses.

Revisions to the Shelby County portions of the AMP provided courtesy of the Shelby County Health Department Air Pollution Control Program.

Local Program Monitors Criteria Data Tables

AQS Code	Parameter	POC	ROC	Date Sampling Began	Operating Schedule	CBSA	Population of CBSA 2010	Population of CBSA 2000 Census	Land Use	Location Setting	Dominant Source	Measurement Scale	Monitor Objective	Monitor Type	Sampling Instrument Name and Designation
471570016	81102	1	0673	01/01/1986	1 in 6	32820	1,316,100	1,205,204	Industrial	Urban and Center City	Area	Neighborhood	Highest Concentration	SLAMS	Sierra-Andersen/GMW 321-BRFPS-1287-064 064
471570016	81102	2	0673	01/01/1986	1 in 6	32820	1,316,100	1,205,204	Industrial	Urban and Center City	Area	Neighborhood	Highest Concentration	QA Collocated	Sierra-Andersen/GMW 321-BRFPS-1287-064 064
471570021	44201	1	0673	09/01/1972	Continuous	32820	1,316,100	1,205,204	Residential	Suburban	Area	'Neighborhood	Population Exposure	SLAMS	Advanced Pollution Instrumentation 400/400A/400E EQAO-0992-087 087
471570024	42101	1	0673	04/01/2006	Continuous	32820	1,316,100	1,205,204	Residential	Suburban	Mobile	Micro scale	Highest Concentration	SLAMS	Teledyne Advanced Pollution Instrumentation 300 or 300E RFCA-1093-093-093
471570024(temporarily discontinued on July 24, 2011)	88502	3	0673	01/01/2006 to 07/24/2011	Continuous	32820	1,316,100	1,205,204	Residential	Suburban	Area	Neighborhood	Population Exposure	SLAMS	R&P TEOM Gravimetric 50 degrees Celsius PM 2.5 SSI w/No Correction Factor 711
471570024	88502	5	0673	05/14/2006	1 in 6	32820	1,316,100	1,205,204	Residential	Suburban	Area	Neighborhood	Population Exposure	TRENDS SPECIATION	Met One SASS 810
471570046	42401	1	0673	05/01/1994	Continuous	32820	1,316,100	1,205,204	Industrial	Suburban	Mobile	Urban Scale	MAX PRECURSOR EMISSIONS IMPACT	SLAMS	Advanced Pollution Instrumentation 100A/100AS ESA-0495-100 100

AQS Code	Parameter	POC	ROC	Date Sampling Began	Operating Schedule	CBSA	Population of CBSA 2010	Population of CBSA 2000 Census	Land Use	Location Setting	Dominant Source	Measurement Scale	Monitor Objective	Monitor Type	Sampling Instrument Name and Designation
471570046	81102	1	0673	05/01/1994	1 in 6	32820	1,316,100	1,205,204	Industrial	Suburban	Area	Neighborhood	MAX PRECURSOR EMISSIONS IMPACT	SLAMS	Sierra-Andersen/GMW 321-B RFPS-1287-064 064
471570047	88101	1	0673	12/01/1998	1 in 1	32820	1,316,100	1,205,204	Residential	Suburban	Area	Neighborhood	Population Exposure	SLAMS	R&P Partisol Plus FRM 2025 PM 2.5 RFPS-0498-118 118
471570047	88101	2	0673	12/01/1998	1 in 6	32820	1,316,100	1,205,204	Residential	Suburban	Area	Neighborhood	Population Exposure	SLAMS	R&P Partisol Plus FRM 2025 PM 2.5 RFPS-0498-118 118
471570075	12128	1	0673	01/01/2012	1 in 6	32820	1,316,100	1,205,204	Industrial	Urban	Area	Urban	Population Exposure	NCORE	Sierra Andersen/GMW 350 RFPS-1087-062 062
471570075	42101	1	0673	04/01/2011	Continuous	32820	1,316,100	1,205,204	Industrial	Urban	Area	Neighborhood and Urban Scale	Population Exposure	NCORE	Teledyne Advanced Pollution Instrumentation 300EU RFCA-1093-093
471570075	42401	1	0673	06/21/2011	Continuous	32820	1,316,100	1,205,204	Industrial	Urban	Area	Neighborhood and Urban Scale	Population Exposure	NCORE	Teledyne Advanced Pollution Instrumentation 100EU EQSA-0495-100
471570075	42600	1	0673	06/17/2011	Continuous	32820	1,316,100	1,205,204	Industrial	Urban	Area	Neighborhood	Population Exposure	NCORE	Teledyne Advanced Pollution Instrumentation 200EU RFNA-1194-099

AQS Code	Parameter	POC	ROC	Date Sampling Began	Operating Schedule	CBSA	Population of CBSA 2010	Population of CBSA 2000 Census	Land Use	Location Setting	Dominant Source	Measurement Scale	Monitor Objective	Monitor Type	Sampling Instrument Name and Designation
471570075	44201	1	0673	03/11/2011	Continuous	32820	1,316,100	1,205,204	Industrial	Urban	Area	Neighborhood and Urban Scale	Population Exposure	NCORE	Teledyne Advanced Pollution Instrumentation 400E/400/400A EQOA-0992-087
471570075	85101	1	0673	01/16/2012	Continuous	32820	1,316,100	1,205,204	Industrial	Urban	Area	Neighborhood and Urban Scale	Population Exposure	NCORE	R&P Partisol Plus FRM 2025 PM 10 RFPS-1298-127
471570075	86101	1	0673	01/16/2012	1 in 3	32820	1,316,100	1,205,204	Industrial	Urban	Area	Neighborhood and Urban Scale	Population Exposure	NCORE	R&P Partisol Plus FRM 2025 PM 10-2.5 RFPS-0509-176
471570075	88101	1	0673	02/23/2011	1 in 3	32820	1,316,100	1,205,204	Industrial	Urban	Area	Neighborhood and Urban Scale	Population Exposure	NCORE	R&P Partisol Plus FRM 2025 PM 2.5 RFPS-0498-118
471570075	88502	3	0673	04/08/2011	Continuous	32820	1,316,100	1,205,204	Industrial	Urban	Area	Neighborhood and Urban Scale	Population Exposure	NCORE	R&P TEOM Gravimetric 50 degrees Celsius PM 2.5 SSI w/No Correction Factor 711
471570075	88502	6	0673	02/08/2011	1 in 3	32820	1,316,100	1,205,204	Industrial	Urban	Area	Neighborhood and Urban Scale	Population Exposure	NCORE	Met One SASS 810
471571004	44201	1	0673	02/01/1980	Continuous	32820	1,316,100	1,205,204	Agricultural	Rural	Mobile	Urban	Highest Concentration	SLAMS	Advanced Pollution Instrumentation 400/400A/400E EQOA-0992-087 087

*Reporting Organization Code (ROC) – 0673 Memphis/Shelby County Health Department

Monitoring Equipment Evaluation Memphis AMP

2012 Ambient Monitor and Auxillary Support Equipment Evaluation

Site	Location	AIRS ID	Make	Model	Condition
Alabama	416 Alabama	47-157-0024	URG	3000N; Controller 3N-B0742	Good
			URG	3000N; Module C 3N-B0847	Good
			URG	3000N; Stand (Pump) 3N-B0630	Good
			Met One	SASS; Control Box B1480	Good
			Met One	SASS; Sampling Head A7034	Good
			Met One	SASS; Pump Box B2919	Good
			API	300E	Good
			ESC	8816 (Serial Number 4047)	Good
			Kipp and Zonen	BD 300 (Serial Number 051519)	Good
			Environics	6103 (Serial Number 3445)	Good
			Andersen	PM 10	Poor
Edmund Orgill	6855 Mudville Rd	47-157-1004	API	400	Good
			API	400A	Good
			API	401	Good
			Measurement Technologies	1001	Good
			ESC	8832	Good
			Yokagawa	4182	Poor
			Measurement Technologies Zero Air Unit	1001	Good
Frayser	1330 Frayser	47-157-0021	API	400A	Good
			API	401	Good
			API	401	Good
			Measurement Technologies Zero Air Unit	1001	Good
			ESC	8832	Good
			Yokagawa Strip Chart Recorder	4182	Good
			GMW TSP PM 10 Air Sampler		Poor
Fite Road	3065 Fite Rd.	47-157-0046	API	100A	Good
			API	700	Good
			API	701	Good
			ESC	8832	Good
			Kipp and Zonen	BD 100	Poor
			GMW PM 10		Good
Gas Service	1060 Tupelo	47-157-0016	Sierra Andersen	SN 1513	Good
			Sierra Andersen	SN 1653	Good
Guthrie Clinic	1064 Breedlove	47-157-0047	Rupprecht & Pataschnick	2025	Good
			Rupprecht & Pataschnick	2025	Good
			Andersen PM 2.5	RAAS 2.5-401	Poor
Shelby Farms (NCORE)	6388 Haley Rd.	47-157-0075	API	400E	Good
			API	701H	Good
			ESC	8832	Good
			Rupprecht & Pataschnick	2025	Good
			Rupprecht & Pataschnick	2025	Good
			Met One	Super SASS; Control Box K16485	Good
			Met One	Super SASS; Pump Box K17956	Good
			Met One	Super SASS; Sampling Head	Good
			URG	3000N; Controller 3N-B0690	Good
			URG	3000N; Module C 3N-B0794	Good
			URG	3000N; Stand (Pump) 3N-B0592	Poor
			API	100EU	Good
			API	300EU	Good
			API	200EU	Good
			API	700EU	Good
			API	501Y	Good
			Rupprecht & Pataschnick	1400a	Good
			Climatronics	Met Gear	Good
Health Department Warehouse	994 Bellevue		API	100A	Poor
			API	401	Poor
			API	100A	Poor
			API	300 (Serial Number 609)	Poor
			API	200A (Serial Number 425)	Poor
			API	300E	Poor
			API	100A	Poor
			API	701 (Serial Number 664)	Poor
			Dasibi	1008-PC	Poor
			ESC	8816 (Serial Number 2241)	Poor
			Rupprecht & Pataschnick	2000	Good

Site	Location	AIRS ID	Make	Model	Condition
Health Department Lab	814 Jefferson Ave.		API	400 (Serial Number 299)	Poor
			Rupprecht & Pataschnick	1400	Poor
			Rupprecht & Pataschnick	2025 (Serial Number 20914)	Poor
			API	401 (Serial Number 214)	Poor
			ESC	8832 (Serial Number A1569)	Good
			ESC	8832 (Serial Number A1571)	Good
			ESC	8816 (Serial Number 1264)	Poor
			ESC	8816 (Serial Number 1268)	Poor
			ESC	8816 (Serial Number 1265)	Poor
			ESC	8816 (Serial Number 1266)	Poor
			Measurement Technologies Zero Air Unit	1001 (Serial Number 730553)	Good

Memphis AMP

Shelby County Health Department Air Pollution Control Program Network Review 2012

An assessment of the Shelby County Health Department's (SCHD) ambient air monitoring network has been conducted. The SCHD Air Monitoring Branch has evaluated each air monitoring site according to the requirements and provisions as required by the *Code of Federal Regulations 40, Parts 50, 53, and 58* and have concluded that the number and locations of the monitors in our network comply with the CFR provisions. Therefore, the SCHD is forwarding the enclosed documents with the pertinent air monitoring site information so that the contents may be incorporated into the State of Tennessee's Monitoring Network plan to EPA.

Changes to our air monitoring network include the following:

- The SCHD is in the Second Phase of the Core Based Statistical Area Near Road NO_2 Monitoring. The station will include equipment for multi-pollutant monitoring also. A grant application and work plan has been submitted to EPA on March 28, 2012. The SCHD anticipates being funded for the one required site later this year. The process has begun to determine the Annual Average Daily Traffic (AADT), fleet mix, congestion patterns, roadway design, terrain and meteorology for a possible location.
- The SCHD is in the process of getting equipment set up to generate met data at the Shelby Farms NCORE site.
- The SCHD is looking at monitoring sites that can be eliminated in order to reduce costs. One monitor is the SO_2 monitor at Fite Rd. (47-157-0046) and another is the PM 10 at Fite Rd. also.
- The PM 2.5 continuous monitor (TEOM) is temporarily discontinued at the Alabama (47-157-0024) site. The EPA was notified on September 19, 2011 of the status on the monitor and has given the SCHD approval to temporarily discontinue this sampling until funds are located to replace the monitor. This monitor began to malfunction on July 25, 2011. This information has been notated in AQS. The letters requesting the discontinuation and approval from EPA are attached in Appendix 3.

Active Sites

Shelby County Health Department Active Sites	Pollutant	Monitor	AQS ID
416 Alabama	CO Continuous PM 2.5 Speciation (6 day) Carbon (6 Day)	Teledyne API Met One SASS URG 3000	47-157-0024
6855 Mudville (Edmund Orgill Park)	O_3 Continuous	Teledyne API	47-157-1004
1330 Frayser	O_3 Continuous	Teledyne API	47-157-0021
3065 Fite Rd.	SO_2 Continuous PM 10 (6 day)	Teledyne API Sierra Andersen 321-B	47-157-0046
1060 Tupelo	PM 10 Collocated (6 day)	Sierra Andersen 321-B	47-157-0016
1064 Breedlove	PM 2.5 Collocated (Daily and 6 day)	R&P 2025 Seq.	47-157-0047
6388 Haley Rd.	Pb (6 day) CO (Trace) Continuous SO_2 (Trace) Continuous NOY Continuous O_3 Continuous PM 10 (lo vol) (3 day), PM 10-2.5 (3 day) PM 2.5 (3 day) PM 2.5 Continuous PM 2.5 Speciation (3 day) Carbon (3 day)	Sierra Andersen 350 Teledyne API Teledyne API Teledyne API Teledyne API R&P 2025 PM 10 R&P 2025 PM 2.5 R&P 2025 PM 2.5 R&P TEOM Met One Super SASS URG 3000	47-157-0075

Appendix 2: Monitoring MOU MSCHD Ark. and Miss.

Appendix 2: MSA Monitoring Agreements for Memphis and Shelby County Health Department and the states of Arkansas and Mississippi
Shelby County Agreement Letter (Page 1 of 6)

SHELBY COUNTY HEALTH DEPARTMENT

Mark H. Luttrell, Jr.
Mayor
Shelby County

Yvonne S. Madlock
Director

Helen Morrow, M.D.
Health Officer

Public Health
Prevent. Promote. Protect.

March 28, 2012

Mr. Jackie Waynick, Chief Environmental Manager
Tennessee Division of Air Pollution Control
9th Floor, L & C Annex
Nashville, TN 37243-1531

Mr. Jerry Beasley, Environmental Regulator
Mississippi Department of Environmental Quality
Office of Pollution Control
P.O. Box 2261
Jackson, MS 39225

Ms. Teresa Marks, Division Director
Arkansas Department of Environmental Quality
5301 Northshore Dr.
North Little Rock, AR 72118

Dear All,

Attached is a revision to the Air Monitoring Memorandum of Agreement (MOA) between our respective agencies. This revision document serves as the notification of changes described in the MOA between the Shelby County Health Department (SCHD), Mississippi Department of Environmental Quality (MDEQ), and the Arkansas Department of Environmental Quality (ADEQ) signed May and June of 2008. Of primary interest is the addition of the NCORE Air Monitoring Station located in Shelby Farms in Memphis.

NCORE
Shelby County was chosen by EPA as one of 75 NCORE site locations, nationally. This multi-pollutant air monitoring station is located at 6388 Haley Road (47-157-0075) in the Shelby Farms area.

NO2
The Shelby County Health Department (SCHD) once operated a NO_2 analyzer at 416 Alabama (47-157-0024). It began to malfunction on October 23, 2006. The site operator, along with a service advisor with Teledyne Instruments Advanced Pollution Instrumentation concluded that diagnosis of the problem would have to be made at the factory. The Teledyne-API technician determined that the NO_2 analyzer needed considerable repair. Taking into account the age of the instrument and the cost of repair, it was deemed to be not worthy of repair. Also, the SCHD

did not have the resources to replace the analyzer. As a consequence, NO_2 has not been monitored in Shelby County since 2006. This information has been notated in AQS. Shelby County anticipates in participating in the Second Phase of the Core Based Statistical Area Near Road NO_2 monitoring in conjunction with the recently promulgated NO2 regulations.

PM 2.5

The PM 2.5 continuous monitor (TEOM) is temporarily discontinued at the Alabama (47-157-0024) site. The EPA was notified on September 19, 2011 of the status on the monitor and has given the SCHD approval to temporarily discontinue this sampling until funds are located to replace the monitor. This monitor began to malfunction on July 25, 2011. This information has been notated in AQS. The letters requesting the discontinuation and approval are attached in the Appendix.

OZONE

The ozone monitoring requirement for NCORE increases the number of ozone analyzers in Shelby County to three at the following sites: 47-157-0021, 47-157-0075 and 47-157-1004.

LEAD

The current lead (Pb) NAAQS requires identifying sources of lead emissions of one half ton per year or greater. The emissions inventory indicates that there are no sources with emissions of one half ton or greater. Therefore, the SCHD does not anticipate having to do any lead source sampling. However, lead monitoring is a component of the NCORE site. Lead sampling began on January 4, 2012.

If you have any questions, please call me at (901) 222-9597.

Sincerely,

Bob Rogers

Bob Rogers, Technical Manager
Pollution Control

MEMORANDUM OF AGREEMENT ON AIR QUALITY MONITORING FOR CRITERIA POLLUTANTS FOR THE MEMPHIS, TN- MS- AR METROPOLITAN STATISTICAL AREA (MSA)

Participating Agencies:

Shelby County Health Department (SCHD)
Air Pollution Control Program

Mississippi Department of Environmental Quality (MDEQ)
Office of Pollution Control, Air Division

Arkansas Department of Environmental Quality (ADEQ)

PURPOSE / OBJECTIVE / GOALS

The purpose of this Memorandum of Agreement (MOA) is to inform the entities of the Memphis, Tennessee-Mississippi-Arkansas Metropolitan Statistical Area of monitoring network changes. The MOA between SCHD, MDEQ, and ADEQ is to collectively meet United States Environmental Protection Agency (EPA) minimum monitoring requirements for particles of an aerodynamic diameter of 10 micrometers and less (PM 10), particles of an aerodynamic diameter of 2.5 micrometers and less (PM 2.5), and ozone; as well as other criteria pollutants air quality monitoring deemed necessary to meet the needs of the MSA as determined reasonable by all parties. This MOA will formalize and reaffirm the collective agreement in order to provide adequate criteria pollutant monitoring for the Memphis, TN-MS-AR MSA as required by 40 CFR 58 Appendix D, Section 2, (e).

PM 2.5 MSA monitoring network include:

County	Federal Referenced Method PM 2.5	Continuous PM 2.5	Speciation PM 2.5	Co located PM 2.5
Shelby County, TN **SCHD**	2	1	2	1
Crittenden County , AR **ADEQ**	1	1		
DeSoto County, MS **MDEQ**	1	1		1

Criteria Air Pollutant MSA monitoring network include:

County	PM 10	O_3	$NO_x/NO/NO_2$	CO	SO_2
Shelby County, TN **SCHD**	2	3		2 (includes 1 trace at NCORE)	2 (includes 1 trace at NCORE)
Crittenden County , AR **ADEQ**		1	1		
DeSoto County, MS **MDEQ**		1			

RESPONSIBILITIES / ACTIONS

Each of the parties to this Agreement is responsible for ensuring that its obligations under the MOA are met. As conditions warrant, the affected agencies may conduct telephone conference calls, meetings, or other communications to discuss monitoring activities for the MSA. Each affected agency shall inform the other affected agencies via telephone or email of any monitoring changes occurring within its jurisdiction of the MSA at its earliest convenience, after learning of the need for the change or making the changes. Such unforeseen changes may include evictions from monitoring sites, destruction of monitoring sites due to natural disasters, or any occurrences that result in an extended (greater than one quarter) or permanent change in the monitoring network.

LIMITATIONS

- All commitments made in this MOA are subject to the availability of appropriated funds and each agency's budget priorities. Nothing in this MOA obligates SCHD, MDEQ, or ADEQ to expend appropriations or to enter into any contract, assistance agreement, interagency agreement or other financial obligation.

- This MOA is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between parties to this agreement will be handled in accordance with applicable laws, regulations, and procedures, and will be subject to separate agreements that will be affected in writing by representatives of the parties.

- This MOA does not create any right or benefit enforceable by law or equity against SCHD, MDEQ, or ADEQ, their officers or employees, or any other person. This MOA does not apply to any entity outside SCHD, MDEQ, or ADEQ.

- No proprietary information or intellectual property is anticipated to arise out of this MOA.

TERMINATION

This Memorandum of Agreement may be revised upon the mutual consent of SCHD, MDEQ and ADEQ. Each party reserves the right to terminate this MOA. A thirty (30) day written notice must be given prior to the date of termination.

Shelby County Air Pollution Monitoring Sites 2012

Site	Address	State	County	Site	Pollutant	Parameter	POC
Alabama	416 Alabama	47	157	0024	CO	42101	1
					PM 2.5	88502	5
Edmund Orgill	6855 Mudville Rd.	47	157	1004	O_3	44201	1
Frayser	1330 Frayser Blvd.	47	157	0021	O_3	44201	1
Fite Rd.	3065 Fite Rd.	47	157	0046	SO2	42401	1
					PM 10	81102	1
Gas Service Center	1060 Tupelo	47	157	0016	PM 10	81102	1
					PM 10	81102	2
Guthrie Clinic	1064 Breedlove	47	157	0047	PM 2.5	88101	1
					PM 2.5	88101	2
Shelby Farms (NCORE)	6388 Haley Rd.	47	157	0075	Pb	14129	
					CO (Trace)	42101	1
					SO_2 (Trace)	42401	1
					NOY	42600	1
					O_3	44201	1
					PM 10 (Lo Vol)	85101	1
					PM 10-2.5	86101	1
					PM 2.5	88101	1
					PM 2.5	88502	3
					PM 2.5	88502	6

Appendix 3 TEOM Notification to EPA

Appendix 3: Notification to EPA about TEOM monitor at the Alabama site (47-157-0024)
(Page 1 of 2)

SHELBY COUNTY HEALTH DEPARTMENT

Mark H. Luttrell, Jr.
Mayor
Shelby County

YVONNE S. MADLOCK
DIRECTOR

HELEN MORROW, M.D.
HEALTH OFFICER

Public Health
Prevent. Promote. Protect.

Stacy Harder
Environmental Engineer
Air, Pesticides & Toxics Management Division
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

Dear Ms. Harder:

September 19, 2011

The Shelby County Health Department (SCHD) operates a continuous PM2.5 TEOM analyzer at 416 Alabama (47-157-0024). It began to malfunction on July 25, 2011. The analyzer would power up for a few seconds and then the CPU side of the instrument would shut down. The SCHD technician talked to a technician with Thermo Fisher Scientific, who stated that it could be any number of things wrong. The technician suggested that it should be shipped back to them in order to determine what the repair cost would be. The instrument was subsequently shut down.

This instrument was the first TEOM in Shelby County's air monitoring network, and was placed into operation on February 1, 1994. Over the years, this instrument has had numerous repairs. Staff technicians and the manufacturer performed these repairs. The SCHD currently does not have the resources to repair or replace the TEOM. And considering the age of this instrument, replacing it might be the most feasible avenue to take. Therefore, the SCHD is officially notifying EPA of the temporary status of the TEOM at 416 Alabama. As soon as funds are identified, action will be taken to rectify the situation.

Participating agencies of the Memphis, TN-MS-AR Metropolitan Statistical Area (MSA) have a signed Memorandum Of Agreement (MOA). This MOA formalizes and reaffirms the collective agreement in order to provide adequate criteria pollutant monitoring for the Memphis, TN-MS-AR MSA as required by 40 CFR 58 Appendix D, Section 2, (e). Currently, Crittenden County, Arkansas and DeSoto County, Mississippi have TEOMs in operation. In addition the SCHD has a TEOM at the NCore (47-157-0075) site.

If there are any questions or concerns, feel free to call me at (901) 222-9546.

Sincerely,

Edward C. Cain, Supervisor
Air Pollution Control
Air Monitoring Branch

Mission
To promote, protect and improve the health and environment of all Shelby County residents.

814 Jefferson Avenue♦Memphis, Tennessee 38105
(901) 222-9000

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

NOV 2 1 2011

NOV 2 9 2011

Mr. Edward C. Cain
Air Pollution Control
Air Monitoring Branch
Shelby County Health Department
814 Jefferson Avenue
Memphis, Tennessee 38105

Dear Mr. Cain:

This is in response to your letter dated September 19, 2011, requesting that the U.S. Environmental Protection Agency review a request to temporarily discontinue ambient air monitoring submitted by the Memphis and Shelby County Health Department (MSCHD). Specifically, MSCHD is proposing to temporarily discontinue fine particulate monitoring ($PM_{2.5}$) at the 416 Alabama (AQS ID 47-157-0024) state or local air monitoring station. Regulations for ambient air quality surveillance are found at 40 CFR Part 58.

EPA has reviewed this request and determined that the monitor is eligible for discontinuation under the minimum monitoring requirements for continuous $PM_{2.5}$, found in section 4.7.2 and Table D-5 of 40 CFR Part 58 Appendix D. The Memphis core based statistical area will continue to meet the continuous $PM_{2.5}$ collocation monitoring requirements after this monitor is temporarily discontinued. It is our understanding that MSCHD plans to repair or replace the monitor as soon as funds allow. Therefore, EPA approves the temporary discontinuation of the monitor listed above.

Should you have any questions, please contact Doug Neeley at (404) 562-9097, or have your staff contact Stacy Harder at (404) 562-9042 or harder.stacy@epa.gov.

Sincerely,

for Gwendolyn Keyes Fleming
Regional Administrator

cc: Mr. Jackie Waynick
TDEC, Chief of Environmental Technical Services

Archie Lee, EPA Region 4 SESD

Appendix 4 SCHD Air Pollution Sites

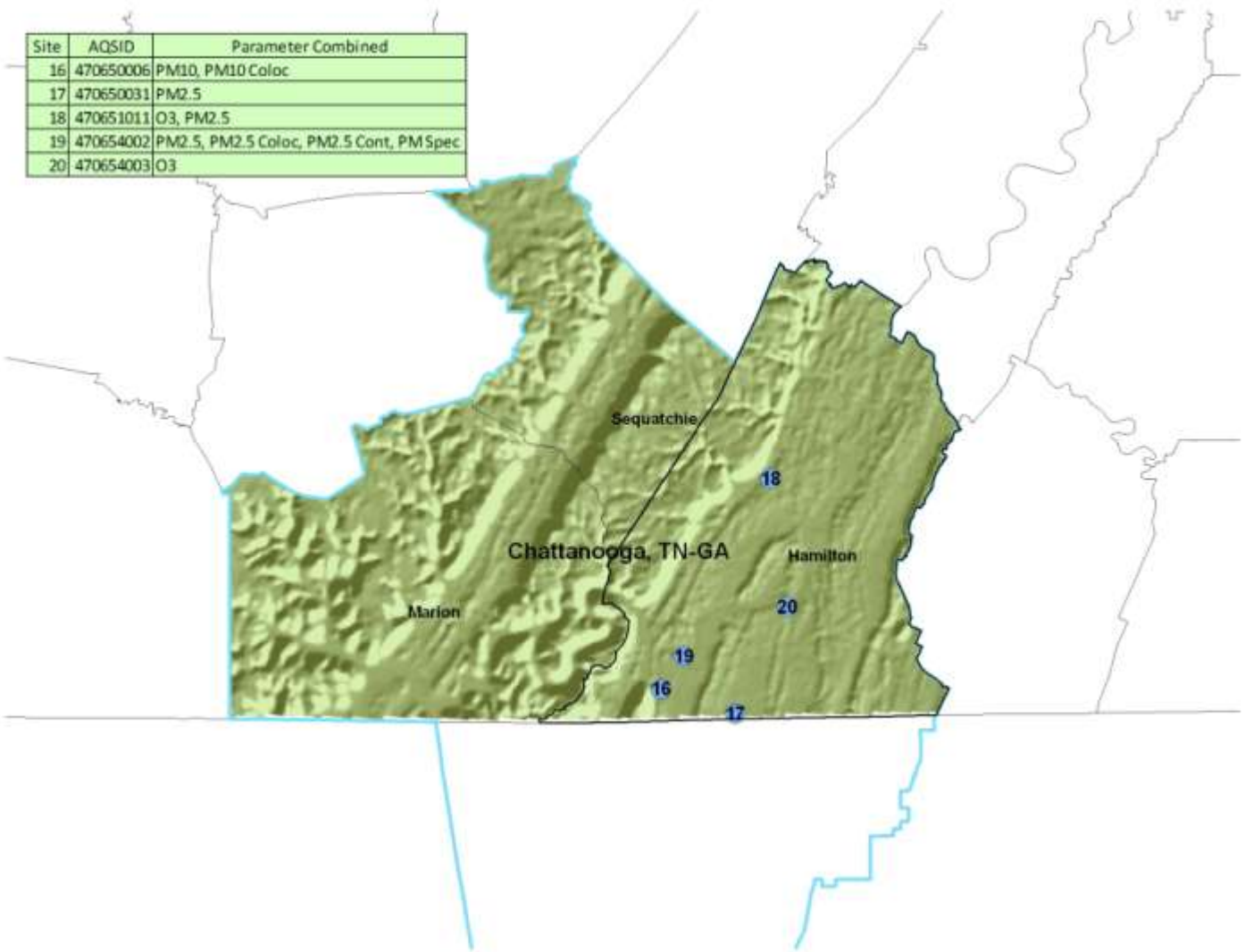
Appendix 4: Shelby County Health Department Air Pollution Sites
(Page 1 of 1)

SHELBY COUNTY
AIR POLLUTION MONITORING SITES
2012

SITE	ADDRESS	STATE	COUNTY	SITE	OBJECTIVE	POLLUTANT	PARAMETER	UNIT	POC	ANALYSIS	METHOD
ALABAMA	418 ALABAMA	47	157	0024	1	CO	42101	007	1	GAS FILTER CORRELATION	093
						PM-2.5	88502	073	6	SPECIATION ANALYSIS & CARBON	810
EDMUND ORGILL	8855 MUDVILLE RD	47	157	1004	1	O3	44201	007	1	ULTRAVIOLET	087
FRAYSER	1330 FRAYSER BLVD	47	157	0021	2	O3	44201	007	1	ULTRAVIOLET	087
FITE RD	3065 FITE RD	47	157	0046	1	SO2	42401	007	1	UV FLUORESCENCE	100
					1	PM-10	81102	072	1	GRAVAMETRIC	064
GAS SERVICE CENTER	1060 TUPELO	47	157	0016	2	PM-10	81102	072	1	GRAVAMETRIC	064
					2	PM-10	CO-LOCATED	072	2	GRAVAMETRIC	064
GUTHRIE CLINIC	1064 BREEDLOVE	47	157	0047	1	PM-2.5	88101	105	1	GRAVAMETRIC	118
					1	PM-2.5	CO-LOCATED	105	2	GRAVAMETRIC	118
SHELBY FARMS (NCORE)	6368 HALEY RD	47	157	0075	1	Pb	14129	001	1	ATOMIC ABSORPTION	092
					1	CO (TRACE)	42101	007	1	GAS FILTER CORRELATION	593
					1	SO2 (TRACE)	42401	008	1	UV FLUORESCENCE	600
					1	NOY	42600	008	1	CHEMILUMINESCENCE	599
					1	O3	44201	007	1	ULTRAVIOLET	087
					1	PM 10 (LO VOL)	85101	105	1	GRAVAMETRIC	127
					1	PM 10-2.5	86101	105	1	GRAVAMETRIC	176
					1	PM 2.5	88101	105	1	GRAVAMETRIC	118
						PM 2.5	88502	073	3	TEOM GRAVAMETRIC	711
						PM 2.5	88502	073	6	SPECIATION ANALYSIS & CARBON	810

Chattanooga, TN-GA Area

Site	AQSID	Parameter Combined
16	470650006	PM10, PM10 Coloc
17	470650031	PM2.5
18	470651011	O3, PM2.5
19	470654002	PM2.5, PM2.5 Coloc, PM2.5 Cont, PM Spec
20	470654003	O3



Tennessee's Interpretation of Ambient Air Monitors Needed to meet the 40CFR, Part 58 Requirements

Census Area Identification and Population Data			14129 Lead		42101 CO		42401 SO2		42602 NO2		44201 Ozone			81102 PM 10		88101 PM 2.5				88502 PM 2.5 Speciation		88101 or 88501 PM 2.5 Cont	
CBSA 2003 Code	Census 2000 / 2010	CBSA 2003 Title (MS Areas)	Operating	Required	Operating	Required	Operating	Required	Operating	Required	Operating	2009 2011 8 Hr DV	Required	Operating	Required	Operating	2009 2011 Annual DV ug/m^3	2009 2011 24 Hr DV ug/m^3	Required	Operating	Required	Operating	Required
16860	476531/ 533372	Chattanooga, TN-GA	0	0	0	0	0	0	0	0	2	0.073	2	2[1]	1 - 2	4[1]	11.2	24	1	1	1	1	1

[1] Includes collocated monitor.

The TEOM POC 3 PM2.5 particulate monitors and the speciation POC 5 STN monitors are generally not suited to be used for comparisons to the annual PM2.5 standards.

No lead or SO2 monitors are anticipated to be required to be established. The need for additional monitoring sites may be met by re-location of existing network sites. Additional monitoring sites will require additional resources for both equipment and operational expenses.

AQSID	County Name	Monitor Type	Para	Para Name	POC	Int	Year	Collection Frequency	Address	CBSA	Lat	Lon	Mtd	RepOrg	RepOrgName
470650006	Hamilton	SLAMS	81102	PM10	1	7	2012	6	3300 SOUTH BROAD STREET. 33RD AND BROAD,	16860	+35.017139	-85.322056	064	0170	Chattanooga-Hamilton County Air Pollution Control
470650006	Hamilton	SLAMS	81102	PM10	2	7	2012	6	3300 SOUTH BROAD STREET. 33RD AND BROAD,	16860	+35.017139	-85.322056	064	0170	Chattanooga-Hamilton County Air Pollution Control
470650031	Hamilton	SPECIAL PURPOSE	88101	PM2.5	1	7	2012	3	1517 TOMBRAS AVENUE, EAST RIDGE	16860	+34.994555	-85.242872	118	0170	Chattanooga-Hamilton County Air Pollution Control
470651011	Hamilton	UNKNOWN	44201	O3	1	1	2012	Hourly	SODDY DAISY H.S. 00618 SEQUOYAH RD	16860	+35.233527	-85.181806	000	0170	Chattanooga-Hamilton County Air Pollution Control
470651011	Hamilton	SPECIAL PURPOSE	88101	PM2.5	1	7	2012	6	SODDY DAISY H.S. 00618 SEQUOYAH RD	16860	+35.233527	-85.181806	118	0170	Chattanooga-Hamilton County Air Pollution Control
470654002	Hamilton	SLAMS	88101	PM2.5	1	7	2012	3	RIVERSIDE SUBSTATION 911 SISKIN DR	16860	+35.050928	-85.292975	118	0170	Chattanooga-Hamilton County Air Pollution Control
470654002	Hamilton	SLAMS	88101	PM2.5	2	7	2012	3	RIVERSIDE SUBSTATION 911 SISKIN DR	16860	+35.050928	-85.292975	118	0170	Chattanooga-Hamilton County Air Pollution Control
470654002	Hamilton	IMPROVE	88501	PM2.5 Cont	3	1	2012	Hourly	RIVERSIDE SUBSTATION 911 SISKIN DR	16860	+35.050928	-85.292975	715	0170	Chattanooga-Hamilton County Air Pollution Control
470654002	Hamilton	SUPLMNTL SPECIATION	88502	PM Spec Carbon	5	7	2012	6	RIVERSIDE SUBSTATION 911 SISKIN DR	16860	+35.050928	-85.292975	810	0170	Chattanooga-Hamilton County Air Pollution Control
470654003	Hamilton	SLAMS	44201	O3	1	1	2012	Hourly	6200 BONNY OAKS DRIVE EASTSIDE UTILITY F	16860	+35.102638	-85.162194	047	0170	Chattanooga-Hamilton County Air Pollution Control

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
470650006	Hamilton	SLAMS	81102	PM10	SIERRA-ANDERSEN/GMW 321-B	GRAVIMETRIC	RFPS-1287-064	UNKNOWN	AREA	URBAN SCALE	INDUSTRIAL	URBAN AND CENTER CITY	1/1/1965
470650006	Hamilton	SLAMS	81102	PM10	SIERRA-ANDERSEN/GMW 321-B	GRAVIMETRIC	RFPS-1287-064	UNKNOWN	AREA	URBAN SCALE	INDUSTRIAL	URBAN AND CENTER CITY	1/1/1965
470650031	Hamilton	SPECIAL PURPOSE	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	REGIONAL TRANSPORT	AREA	NEIGHBORHOOD	COMMERCIAL	URBAN AND CENTER CITY	5/6/1999
470651011	Hamilton	UNKNOWN	44201	O3	#N/A	#N/A	#N/A	HIGHEST CONCENTRATION	AREA	REGIONAL SCALE	AGRICULTURAL	RURAL	8/1/1978
470651011	Hamilton	SPECIAL PURPOSE	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	REGIONAL TRANSPORT	NULL	REGIONAL SCALE	AGRICULTURAL	RURAL	8/1/1978
470654002	Hamilton	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	NULL	URBAN SCALE	COMMERCIAL	URBAN AND CENTER CITY	1/1/1999
470654002	Hamilton	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	NULL	URBAN SCALE	COMMERCIAL	URBAN AND CENTER CITY	1/1/1999
470654002	Hamilton	IMPROVE	88501	PM2.5 Cont		TEOM Gravimetric 30 deg C		POPULATION EXPOSURE	AREA	URBAN SCALE	COMMERCIAL	URBAN AND CENTER CITY	1/1/1999
470654002	Hamilton	SUPLMNTL SPECIATION	88502	PM Spec Carbon	MetOne Super SASS URG 3000	Gravimetric		POPULATION EXPOSURE	NULL	NULL	COMMERCIAL	URBAN AND CENTER CITY	1/1/1999
470654003	Hamilton	SLAMS	44201	O3	THERMO ELECTRON 49	ULTRA VIOLET	EQOA-0880-047	POPULATION EXPOSURE	MOBILE	NEIGHBORHOOD	INDUSTRIAL	RURAL	3/1/2004

Chattanooga-Hamilton County Air Pollution Control Bureau
Network Review 2012

Ozone Attainment

On February 14, 2012, EPA published in the *Federal Register, Volume 77, No. 30,* a proposed rule to implement the March 12, 2008, NAAQS for ground level ozone at .075 parts per million (ppm). This proposed rule required designation recommendations from the State of Tennessee for areas in the State. The Chattanooga Area (for ozone is comprised of Hamilton and Meigs Counties in Tennessee and Catoosa and Walker Counties in Georgia) is recommended for attainment for the .075 ppm ozone standard for the years 2009-2011. The Area data is also showing attainment for the .075 ppm standard for 2008-2010.

$PM_{2.5}$ Attainment

In the May 31, 2011, *Federal Register, Vol. 76, No. 104,* (finalized June 30, 2011) EPA determined that the Chattanooga Area (for $PM_{2.5}$ is comprised of Hamilton County in Tennessee, Catoosa and Walker Counties in Georgia, and a portion of Jackson County in Alabama) has attaining data for the 1997 annual $PM_{2.5}$ NAAQS. EPA states that the requirements to submit an attainment demonstration and associated reasonably available control measures (RACM), a reasonable further progress (RFP) plan, contingency measures, and other planning State Implementation Plan (SIP) revisions related to attainment of the standard shall be suspended so long as the Chattanooga Area continues to attain the 1997 annual $PM_{2.5}$ NAAQS.

Active Sites

Chattanooga-Hamilton County Active Sites	Pollutant	Monitor	AQS #
3300 South Broad Street/ WDEF	PM_{10} Collocated (6-day)	Sierra Anderson 321B	470650006
911 Siskin Drive formerly University of Tennessee at Chattanooga (UTC)	$PM_{2.5}$ Collocated (3-day) $PM_{2.5}$ Speciation (6-day) Carbon (6-day) $PM_{2.5}$ Continuous TEOM	R & P 2025 Seq. Met 1 SuperSASS URG 3000 TEOM 1400A	470654002 CORE $PM_{2.5}$
1517 Tombras Avenue/ formerly 1510 Maxwell Rd	$PM_{2.5}$ (Collocation from 1/1/2009-1/17/2010) 3-day monitoring began 1/20/2010)	R & P 2025 Seq.	470650031
618 Sequoyah Access Road at Soddy-Daisy High School	$PM_{2.5}$ (6-day) Ozone Continuous Ozone Calibrator	R & P 2025 Seq. TECO 49C TECO 49CPS	470651011
6200 Bonny Oaks Drive Eastside Utility District	Ozone Continuous Ozone Calibrator	TECO 49C TECO 49CPS	470654003

Revisions to the Hamilton County portions of the AMP provided courtesy of the Chattanooga-Hamilton County Air Pollution Control Bureau

Site Changes for 2012

Hamilton County anticipates being funded for one required site in a late implementation phase of the Core-Based Statistical Area near–road monitoring for NO_2. This calendar year the Bureau will find an appropriate near-road site so that a plan can be implemented quickly once funding is in place.

The Bureau is searching for an appropriate site to move the 470654003 Eastside Utility ozone monitor within a one mile radius of the current location. Tightened security has made the site less accessible, and the utility is in the middle of a large expansion project.

Additionally, the Bureau will be looking at monitoring sites which can be eliminated in order to reduce costs.

Monitoring Equipment Evaluation Chattanooga AMP

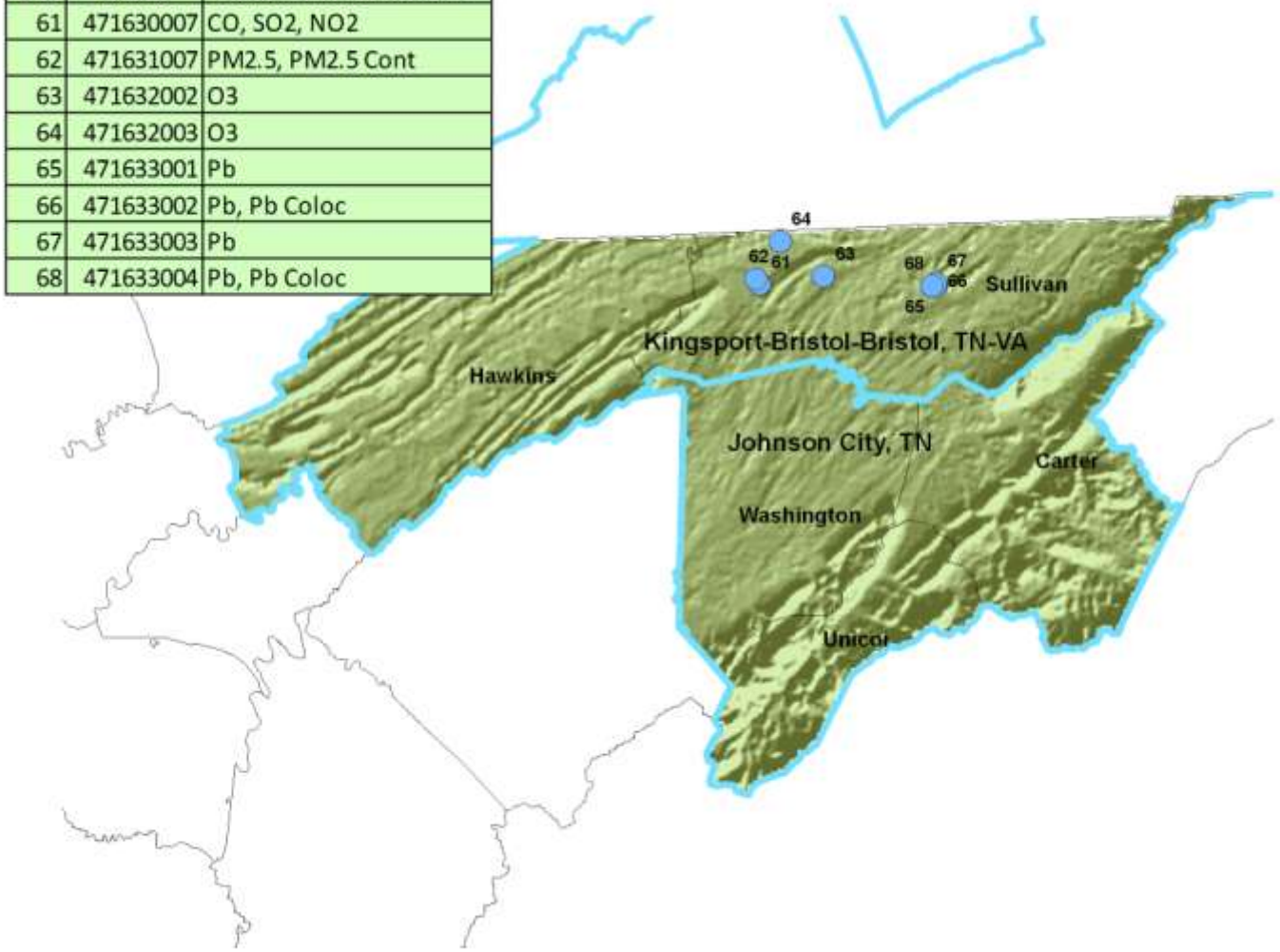
Equipment Condition

Equipment	Location	Serial Number	Condition
PM_{10}	0006	1847	Good
PM_{10}	0006	1845	Good
$PM_{2.5}$	4002	20781	Good
$PM_{2.5}$	4002	20775	Good
$PM_{2.5}$	0031	20772	Good
$PM_{2.5}$	Spare	20774	Good[1]
$PM_{2.5}$	1011	90709	Good
$PM_{2.5}$ TEOM	4002	1400A 24452 Eq Unit SES1B 203940211 Sensor Unit 140AB 244520302	Good
Met One Speciation	4002	a5924/a5910	Good
URG 3000	4002	3N-B0768	Good[2]
Ozone	1011	49C-58192-316	Good
Ozone	4003	49C-57404-313	Good
Ozone Calibrator	1011	49CPS-66337-352	Good
Ozone Calibrator	4003	49CPS-66338-352	Good
Datalogger	1011	ESC 8816	Good
Datalogger	4003	ESC 8816	Good
Datalogger	4002	ESC 8832 AO994	Good
Datalogger	Spare	ESC 8832 A 4010 K	Good
Audit Monitor	1011	0607415796	Good
Chart Recorder	1011	1001685	Good
Chart Recorder	4003	1001686	Good
Chart Recorder	Spare	Leeds/Northrup Speedomax 165 82-31986-1-1	Good
8 X 14 Shelter	1011	Shelter One 8148 SN21051	Good
8 X 14 Shelter	4003	Ekto 8814 SN 3473-1	Good
8 X 14 Shelter	4002	Ekto 8814 SN 3473-2	Good[3]

[1] Currently being rebuilt. Parts are ordered.
[2] Has flow issues for which we are working with URG.
[3] Floor will be repaired or replaced due to water leak.

Kingsport Bristol Johnson City Area

Site	AQSID	Parameter Combined
61	471630007	CO, SO2, NO2
62	471631007	PM2.5, PM2.5 Cont
63	471632002	O3
64	471632003	O3
65	471633001	Pb
66	471633002	Pb, Pb Coloc
67	471633003	Pb
68	471633004	Pb, Pb Coloc



Tennessee's Interpretation of Ambient Air Monitors Needed to meet the 40CFR, Part 58 Requirements

Census Area Identification and Population Data			14129 Lead		42101 CO		42401 SO2		42602 NO2		44201 Ozone			81102 PM 10		88101 PM 2.5				88502 PM 2.5 Speciation		88101 or 88501 PM 2.5 Cont	
CBSA Code	Census 2000 /. 2010	CBSA Title (MS Areas)	Operating	Required	Operating	Required	Operating	Required	Operating	Required	Operating	2009 2011 8 Hr DV	Required	Operating	Required	Operating	2009 2011 Annual DV ug/m	2009 2011 24 Hr DV ug/m	Required	Operating	Required	Operating	Required
27740	181607/ 198716	Johnson City, TN	0	0	0	0	0	0	0	0	0		0	0	0	0			0	0	0	0	0
Census Area Identification and Population Data			14129 Lead		42101 CO		42401 SO2		42602 NO2		44201 Ozone			81102 PM 10		88101 PM 2.5				88502 PM 2.5 Speciation		88101 or 88501 PM 2.5 Cont	
CBSA Code	Census 2000 /. 2010	CBSA Title (MS Areas)	Operating	Required	Operating	Required	Operating	Required	Operating	Required	Operating	2009 2011 8 Hr DV	Required	Operating	Required	Operating	2009 2011 Annual DV ug/m	2009 2011 24 Hr DV ug/m	Required	Operating	Required	Operating	Required
28700	298484/ 309544	Kingsport-Bristol-Bristol, TN-VA	6[1]	1	1	0	1	1	1	0	2	0.070	1	0	0	1	10.7	22	1	0	0	1	1

[1]Includes a collocated state monitor and a collocated company monitor.

The TEOM POC 3 PM2.5 particulate monitors and the speciation POC 5 STN monitors are generally not suited to be used for comparisons to the annual PM2.5 standards.

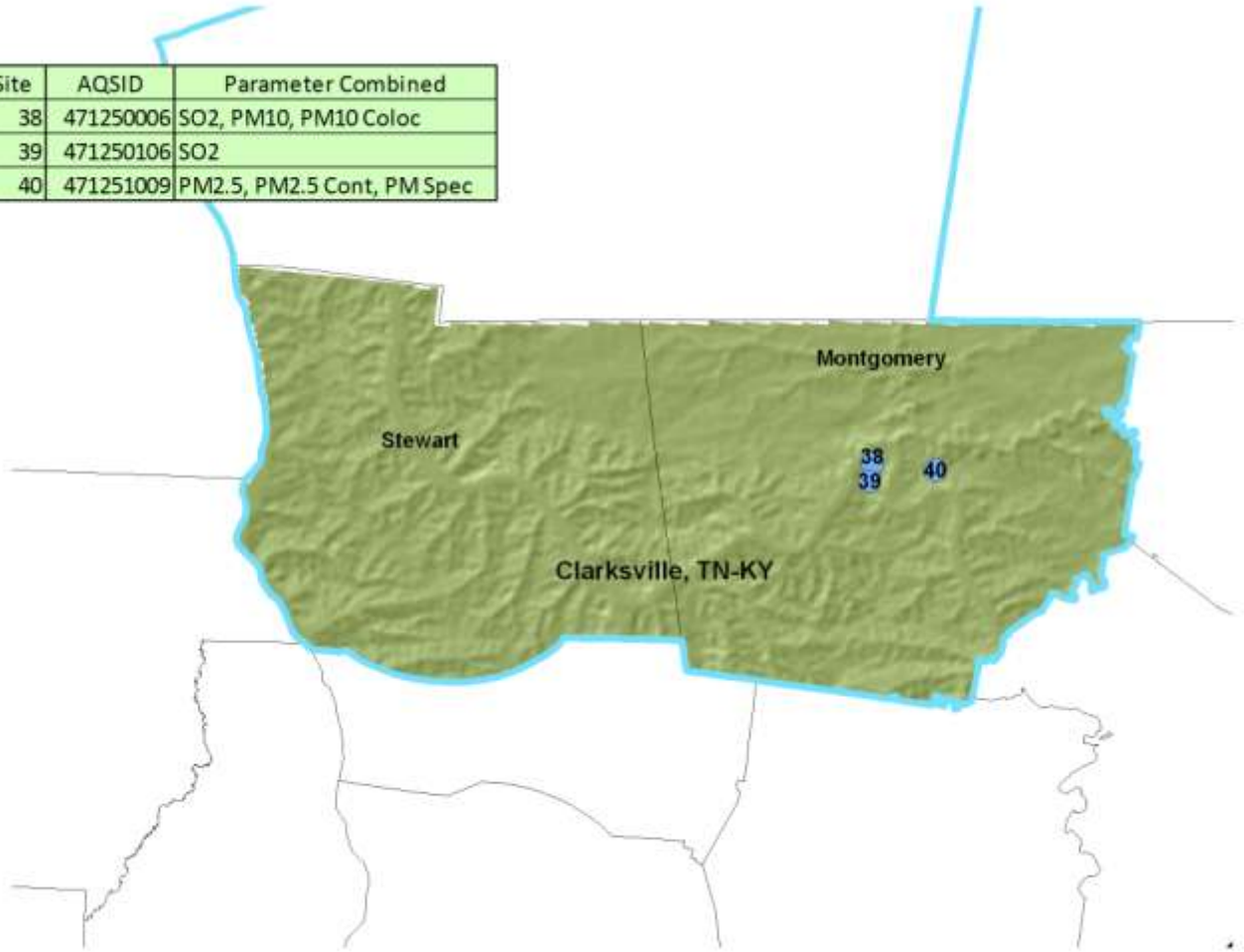
There are no plans to relocate or shutdown any existing monitoring sites in the MSA area described.

AQSID	County Name	Monitor Type	Para	Para Name	POC	Int	Year	Collection Frequency	Address	CBSA	Lat	Lon	Mtd	RepOrg	RepOrgName
471633001	Sullivan	INDUSTRIAL	14129	Pb	1	7	2012	3	364 EXIDE DR.	28700	+36.525556	-82.273333	107	0375	Exide Corporation
471633002	Sullivan	INDUSTRIAL	14129	Pb	1	7	2012	3	364 EXIDE DR. ON EXIDE PROPERTY	28700	+36.524722	-82.268056	107	0375	Exide Corporation
471633002	Sullivan	INDUSTRIAL	14129	Pb	2	7	2012	3	364 EXIDE DR. ON EXIDE PROPERTY	28700	+36.524722	-82.268056	107	0375	Exide Corporation
471633003	Sullivan	INDUSTRIAL	14129	Pb	1	7	2012	3	364 EXIDE DR.	28700	+36.528056	-82.268333	107	0375	Exide Corporation
471630007	Sullivan	INDUSTRIAL	42101	CO	1	1	2012	Hourly	EASTMAN ROSS N.ROBINSON	28700	+36.534804	-82.517078	041	1026	Tennessee Eastman Company
471630007	Sullivan	INDUSTRIAL	42401	SO2	1	1	2012	Hourly	EASTMAN ROSS N.ROBINSON	28700	+36.534804	-82.517078	039	1026	Tennessee Eastman Company
471630007	Sullivan	INDUSTRIAL	42602	NO2	1	1	2012	Hourly	EASTMAN ROSS N.ROBINSON	28700	+36.534804	-82.517078	042	1026	Tennessee Eastman Company
471631007	Sullivan	SLAMS	88101	PM2.5	1	7	2012	3	1649 D STREET	28700	+36.540654	-82.521667	118	1025	Tennessee Division Of Air Pollution Control
471631007	Sullivan	SPECIAL PURPOSE	88501	PM2.5 Cont	3	1	2012	Hourly	1649 D STREET	28700	+36.540654	-82.521667	716	1025	Tennessee Division Of Air Pollution Control
471632002	Sullivan	SLAMS	44201	O3	1	1	2012	Hourly	HILL ROAD	28700	+36.541193	-82.425964	053	1025	Tennessee Division Of Air Pollution Control
471632003	Sullivan	SLAMS	44201	O3	1	1	2012	Hourly	KETRON MIDDLE SCHOOL ON BLOOMINGDALE RD.	28700	+36.582222	-82.485833	053	1025	Tennessee Division Of Air Pollution Control
471633004	Sullivan	SLAMS	14129	Pb	1	7	2012	6	364 Exide Dr	28700	+36.525556	-82.273333	000	1025	Tennessee Division Of Air Pollution Control
471633004	Sullivan	SLAMS	14129	Pb	2	7	2012	6	364 Exide Dr	28700	+36.525556	-82.273333	000	1025	Tennessee Division Of Air Pollution Control

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
471633001	Sullivan	INDUSTRIAL	14129	Pb	PB-TSP/FLAMELESS AA	Flameless Atomic absorption (GFAA); 3M HNO3 Boil 30 min	EQL-0895-107	SOURCE ORIENTED	NULL	NULL	INDUSTRIAL	SUBURBAN	7/1/1994
471633002	Sullivan	INDUSTRIAL	14129	Pb	PB-TSP/FLAMELESS AA	Flameless Atomic absorption (GFAA); 3M HNO3 Boil 30 min	EQL-0895-107	SOURCE ORIENTED	NULL	NULL	INDUSTRIAL	SUBURBAN	7/1/1994
471633002	Sullivan	INDUSTRIAL	14129	Pb	PB-TSP/FLAMELESS AA	Flameless Atomic absorption (GFAA); 3M HNO3 Boil 30 min	EQL-0895-107	SOURCE ORIENTED	NULL	NULL	INDUSTRIAL	SUBURBAN	7/1/1994
471633003	Sullivan	INDUSTRIAL	14129	Pb	PB-TSP/FLAMELESS AA	Flameless Atomic absorption (GFAA); 3M HNO3 Boil 30 min	EQL-0895-107	UPWIND BACKGROUND	NULL	NULL	INDUSTRIAL	SUBURBAN	7/1/1994
471630007	Sullivan	INDUSTRIAL	42101	CO	MONITOR LABS 8310	NONDISPERSIVE INFRARED	RFCA-0979-041	HIGHEST CONCENTRATION	POINT	MIDDLE SCALE	RESIDENTIAL	SUBURBAN	1/1/1974
471630007	Sullivan	INDUSTRIAL	42401	SO2	MONITOR LABS 8850	ULTRA VIOLET STIMULATED FLUORESCNC	EQSA-0779-039	HIGHEST CONCENTRATION	POINT	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	1/1/1974
471630007	Sullivan	INDUSTRIAL	42602	NO2	MONITOR LABS 8840	CHEMILUMINESCENCE	RFNA-0280-042	HIGHEST CONCENTRATION	POINT	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	1/1/1974
471631007	Sullivan	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	NULL	NULL	RESIDENTIAL	SUBURBAN	10/1/1998
471631007	Sullivan	SPECIAL PURPOSE	88501	PM2.5 Cont		TEOM Gravimetric 50 deg C		UPWIND BACKGROUND	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	10/1/1998
471632002	Sullivan	SLAMS	44201	O3	MONITOR LABS 8810	ULTRA VIOLET	EQOA-0881-053	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	RURAL	1/1/1980
471632003	Sullivan	SLAMS	44201	O3	MONITOR LABS 8810	ULTRA VIOLET	EQOA-0881-053	POPULATION EXPOSURE	NULL	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	4/1/1995
471633004	Sullivan	SLAMS	14129	Pb	Pb/TSP	ICP-MS	EQL0310-189	SOURCE ORIENTED	POINT	URBAN SCALE	INDUSTRIAL	URBAN AND CENTER CITY	1/1/2010
471633004	Sullivan	SLAMS	14129	Pb	Pb/TSP	ICP-MS	EQL0310-189	SOURCE ORIENTED	POINT	URBAN SCALE	INDUSTRIAL	URBAN AND CENTER CITY	1/1/2010

Clarksville, TN-KY Area

Site	AQSID	Parameter Combined
38	471250006	SO2, PM10, PM10 Coloc
39	471250106	SO2
40	471251009	PM2.5, PM2.5 Cont, PM Spec



Tennessee's Interpretation of Ambient Air Monitors Needed to meet the 40CFR, Part 58 Requirements

Census Area Identification and Population Data			14129 Lead		42101 CO		42401 SO2		42602 NO2		44201 Ozone			81102 PM 10		88101 PM 2.5				88502 PM 2.5 Speciation		88101 or 88501 PM 2.5 Cont	
CBSA Code	Census 2000 /. 2010	CBSA Title (MS Areas)	Operating	Required	Operating	Required	Operating	Required	Operating	Required	Operating	2009 2011 8 Hr DV	Required	Operating	Required	Operating	2009 2011 Annual DV ug/m	2009 2011 24 Hr DV ug/m	Required	Operating	Required	Operating	Required
17300	232000/ 273949	Clarksville, TN-KY	0	0	0	0	2	0	0	0	0	0.070	1	2[3]	1	1	10.4	23	1	1	0	1	1

[1]State of Kentucky operates an ozone site in Christian County, Kentucky. See Appendix 1 for MSA monitoring agreement prepared by Kentucky for ozone monitoring. [2]State of Tennessee operates a continuous $PM_{2.5}$ monitor in Clarksville, Montgomery County, Tennessee. See Appendix 1 for MSA monitoring agreement prepared by Tennessee for continuous $PM_{2.5}$ monitoring. [3]Includes collocated monitor.

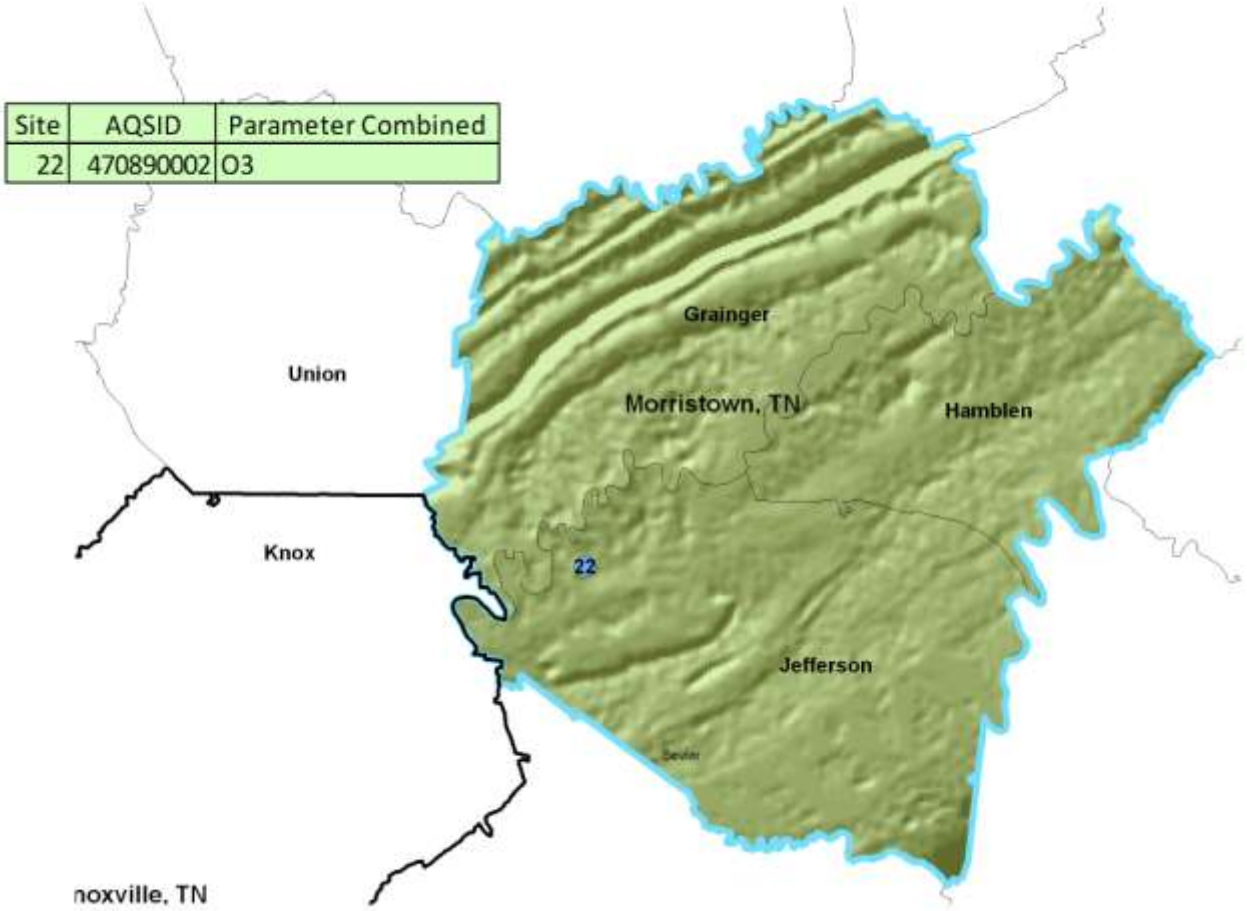
The TEOM POC 3 PM2.5 particulate monitors and the speciation POC 5 STN monitors are generally not suited to be used for comparisons to the annual PM2.5 standards.

There are no plans to relocate or shutdown any existing monitoring sites in the MSA area described.

AQSID	County Name	Monitor Type	Para	Para Name	POC	Int	Year	Collection Frequency	Address	CBSA	Lat	Lon	Mtd	RepOrg	RepOrgName
471250006	Montgomery	INDUSTRIAL	81102	PM10	1	7	2012	6	MEEK'S PROPERTY	17300	+36.520298	-87.395500	063	0953	Savage Zinc Incinc Company
471250006	Montgomery	INDUSTRIAL	81102	PM10	2	7	2012	6	MEEK'S PROPERTY	17300	+36.520298	-87.395500	063	0953	Savage Zinc Incinc Company
471250006	Montgomery	INDUSTRIAL	42401	SO2	1	1	2012	Hourly	MEEK'S PROPERTY	17300	+36.520298	-87.395500	039	1025	Tennessee Division Of Air Pollution Control
471250106	Montgomery	INDUSTRIAL	42401	SO2	1	1	2012	Hourly	CUMBERLAND HEIGHTS ELEMENTARY SCHOOL	17300	+36.505185	-87.397708	039	1025	Tennessee Division Of Air Pollution Control
471251009	Montgomery	SLAMS	88101	PM2.5	1	7	2012	1	1514 GOLF CLUB LANE	17300	+36.514444	-87.327778	118	1025	Tennessee Division Of Air Pollution Control
471251009	Montgomery	SPECIAL PURPOSE	88501	PM2.5 Cont	3	1	2012	Hourly	1514 GOLF CLUB LANE	17300	+36.514444	-87.327778	716	1025	Tennessee Division Of Air Pollution Control
471251009	Montgomery	SUPLMNTL SPECIATION	88502	PM Spec Carbon	5	7	2012	6	1514 GOLF CLUB LANE	17300	+36.514444	-87.327778	810	1025	Tennessee Division Of Air Pollution Control

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
471250006	Montgomery	INDUSTRIAL	81102	PM10	GMW Model 1200	GRAVIMETRIC	RFPS-1287-063	UNKNOWN	NULL	NULL	INDUSTRIAL	RURAL	8/1/1978
471250006	Montgomery	INDUSTRIAL	81102	PM10	GMW Model 1200	GRAVIMETRIC	RFPS-1287-063	UNKNOWN	NULL	NULL	INDUSTRIAL	RURAL	8/1/1978
471250006	Montgomery	INDUSTRIAL	42401	SO2	MONITOR LABS 8850	ULTRA VIOLET STIMULATED FLUORESCNC	EQSA-0779-039	UNKNOWN	POINT	NEIGHBORHOOD	INDUSTRIAL	RURAL	8/1/1978
471250106	Montgomery	INDUSTRIAL	42401	SO2	MONITOR LABS 8850	ULTRA VIOLET STIMULATED FLUORESCNC	EQSA-0779-039	HIGHEST CONCENTRATION	POINT	MIDDLE SCALE	RESIDENTIAL	RURAL	1/1/1982
471251009	Montgomery	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	NULL	NULL	RESIDENTIAL	SUBURBAN	5/4/1997
471251009	Montgomery	SPECIAL PURPOSE	88501	PM2.5 Cont		TEOM Gravimetric 50 deg C		POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	5/4/1997
471251009	Montgomery	SUPLMNTL SPECIATION	88502	PM Spec Carbon	MetOne Super SASS URG 3000	Gravimetric		POPULATION EXPOSURE	NULL	NULL	RESIDENTIAL	SUBURBAN	5/4/1997

Morristown, TN Area



Tennessee's Interpretation of Ambient Air Monitors Needed to meet the 40CFR, Part 58 Requirements

Census Area Identification and Population Data			14129 Lead		42101 CO		42401 SO2		42602 NO2		44201 Ozone			81102 PM 10		88101 PM 2.5				88502 PM 2.5 Speciation		88101 or 88501 PM 2.5 Cont	
CBSA Code	Census 2000 /. 2010	CBSA Title (MS Areas)	Operating	Required	Operating	Required	Operating	Required	Operating	Required	Operating	2009 2011 8 Hr DV	Required	Operating	Required	Operating	2009 2011 Annual DV ug/m	2009 2011 24 Hr DV ug/m	Required	Operating	Required	Operating	Required
34100	123081/ 136608	Morristown, TN	0	0	0	0	0	0	0	0	1	0.073	1	0	0	0			0	0	0	0	0

[1]Historical PM10 data does not reflect a need for PM10 monitoring in this area. [2]PM 2.5 monitoring in the adjacent MSA's should be sufficient to assess PM 2.5 levels in this MSA.

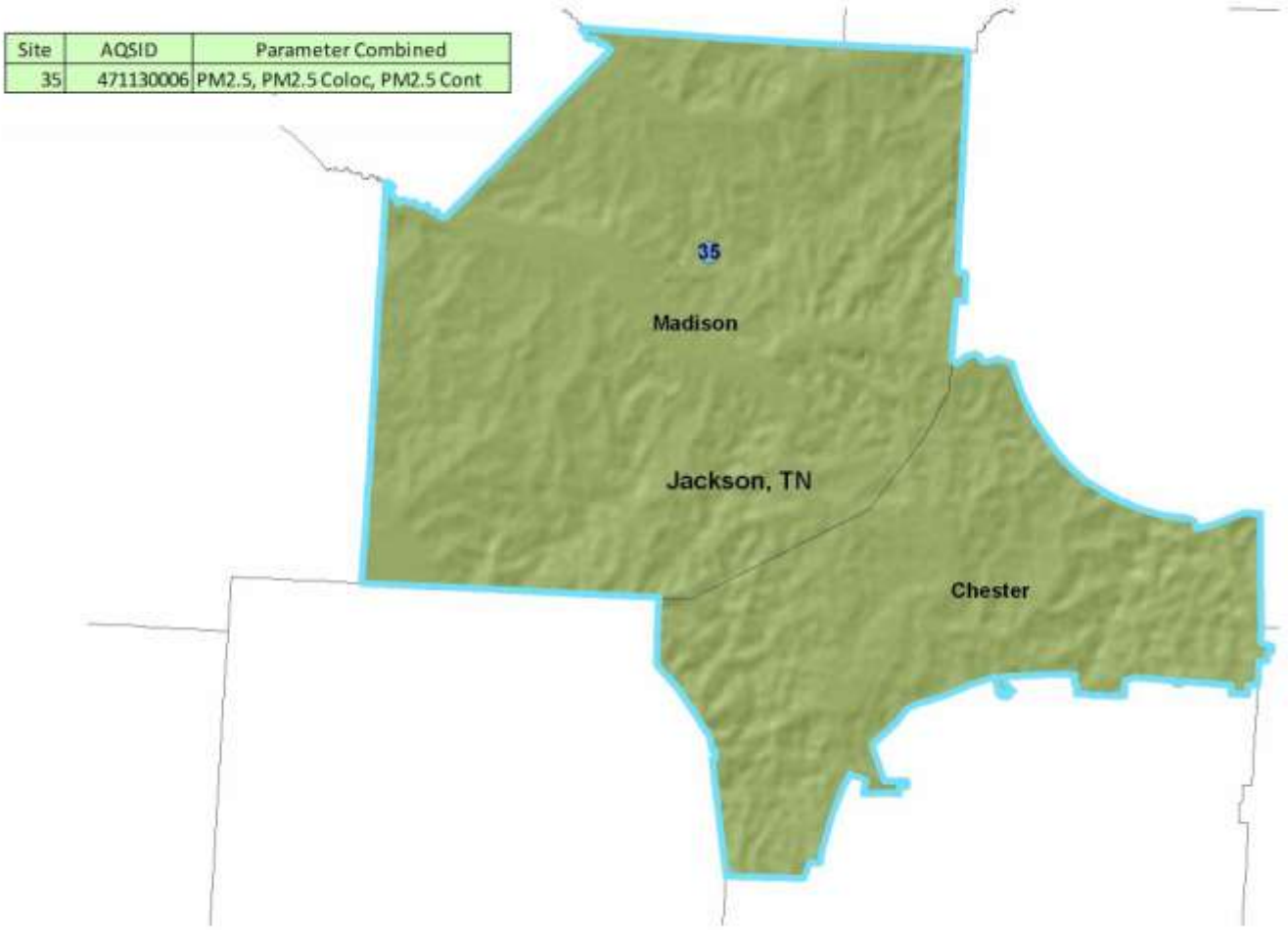
The TEOM POC 3 PM2.5 particulate monitors and the speciation POC 5 STN monitors are generally not suited to be used for comparisons to the annual PM2.5 standards.

There are no plans to relocate or shutdown any existing monitoring sites in the MSA area described.

AQSID	County Name	Monitor Type	Para	Para Name	POC	Int	Year	Collection Frequency	Address	CBSA	Lat	Lon	Mtd	RepOrg	RepOrgName
470890002	Jefferson	SLAMS	44201	O3	1	1	2012	Hourly	2393 FORESTER RD	34100	+36.106	-83.602	087	1025	Tennessee Division Of Air Pollution Control

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
470890002	Jefferson	SLAMS	44201	O3	MODEL 400 OZONE ANALYZER	ULTRA VIOLET ABSORPTION	EQOA-0992-087	UNKNOWN	NULL	NULL	AGRICULTURAL	RURAL	2/1/2010

Jackson, TN Area



Tennessee's Interpretation of Ambient Air Monitors Needed to meet the 40CFR, Part 58 Requirements

Census Area Identification and Population Data			14129 Lead		42101 CO		42401 SO2		42602 NO2		44201 Ozone			81102 PM 10		88101 PM 2.5				88502 PM 2.5 Speciation		88101 or 88501 PM 2.5 Cont	
CBSA Code	Census 2000 /. 2010	CBSA Title (MS Areas)	Operating	Required	Operating	Required	Operating	Required	Operating	Required	Operating	2009 2011 8 Hr DV	Required	Operating	Required	Operating	2009 2011 Annual DV ug/m	2009 2011 24 Hr DV ug/m	Required	Operating	Required	Operating	Required
27180	107377/ 115425	Jackson, TN	0	0	0	0	0	0	0	0	0		0	0	0	2[1]	9.3	20	0	0	0	1	1

[1] Includes collocated monitor.

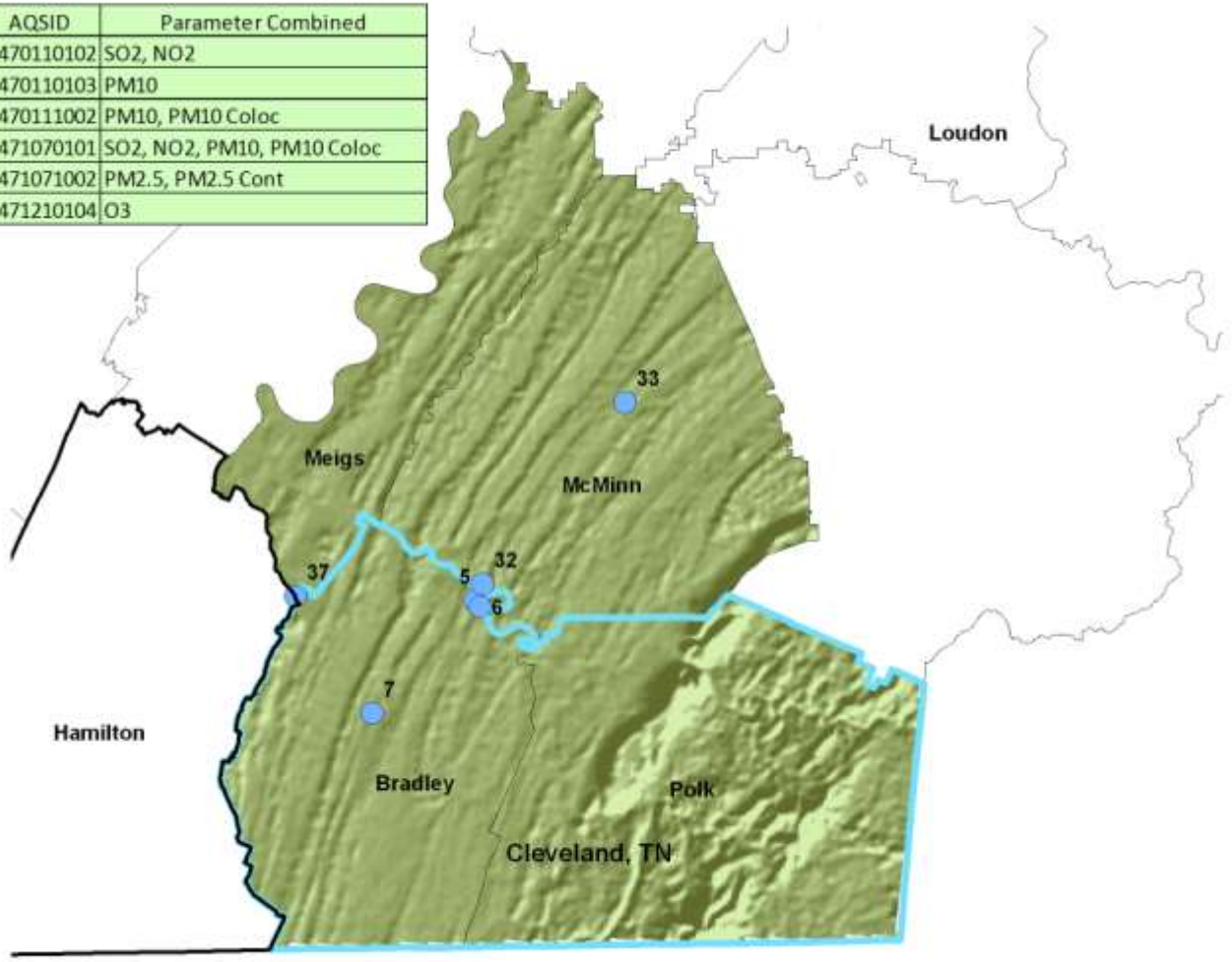
The TEOM POC 3 PM2.5 particulate monitors and the speciation POC 5 STN monitors are generally not suited to be used for comparisons to the annual PM2.5 standards.

AQSID	County Name	Monitor Type	Para	Para Name	POC	Int	Year	Collection Frequency	Address	CBSA	Lat	Lon	Mtd	RepOrg	RepOrgName
471130006	Madison	SLAMS	88101	PM2.5	1	7	2012	3	1371-A NORTH PARKWAY JACKSON, TN 38301	27180	+35.651541	-88.809652	118	1025	Tennessee Division Of Air Pollution Control
471130006	Madison	SLAMS	88101	PM2.5	2	7	2012	3	1371-A NORTH PARKWAY JACKSON, TN 38301	27180	+35.651541	-88.809652	118	1025	Tennessee Division Of Air Pollution Control
471130006	Madison	SPECIAL PURPOSE	88501	PM2.5 Cont	3	1	2012	Hourly	1371-A NORTH PARKWAY JACKSON, TN 38301	27180	+35.651541	-88.809652	716	1025	Tennessee Division Of Air Pollution Control

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
471130006	Madison	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	11/17/2004
471130006	Madison	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	11/17/2004
471130006	Madison	SPECIAL PURPOSE	88501	PM2.5 Cont		TEOM Gravimetric 50 deg C		POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	11/17/2004

Cleveland, TN Area

Site	AQSID	Parameter Combined
5	470110102	SO2, NO2
6	470110103	PM10
7	470111002	PM10, PM10 Coloc
32	471070101	SO2, NO2, PM10, PM10 Coloc
33	471071002	PM2.5, PM2.5 Cont
37	471210104	O3



Tennessee's Interpretation of Ambient Air Monitors Needed to meet the 40CFR, Part 58 Requirements

Census Area Identification and Population Data			14129 Lead		42101 CO		42401 SO2		42602 NO2		44201 Ozone			81102 PM 10		88101 PM 2.5				88502 PM 2.5 Speciation		88101 or 88501 PM 2.5 Cont	
CBSA Code	Census 2000 /. 2010	CBSA Title (MS Areas)	Operating	Required	Operating	Required	Operating	Required	Operating	Required	Operating	2009 2011 8 Hr DV	Required	Operating	Required	Operating	2009 2011 Annual DV ug/m	2009 2011 24 Hr DV ug/m	Required	Operating	Required	Operating	Required
17420	104015/ 115788	Cleveland, TN	0	0	0	0	2	0	2	0	1	0.071	1	5[2]	0	1	10.9	23	0	0	0	1	1

[1]Tennessee operates an ozone site on the Meigs/Bradley County line. [2] Includes collocated monitor.

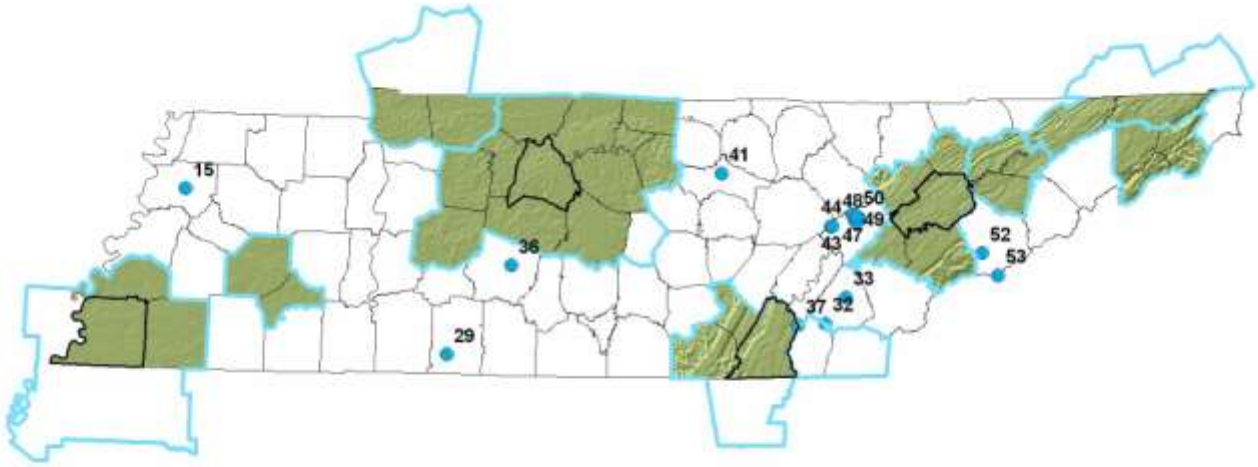
The TEOM POC 3 PM2.5 particulate monitors and the speciation POC 5 STN monitors are generally not suited to be used for comparisons to the annual PM2.5 standards.

Tennessee proposes to shut down collocated PM-10 monitors located at site 47-011-1002.

AQSID	County Name	Monitor Type	Para	Para Name	POC	Int	Year	Collection Frequency	Address	CBSA	Lat	Lon	Mtd	RepOrg	RepOrgName
470110103	Bradley	INDUSTRIAL	81102	PM10	1	7	2012	6	BOWATERS VEC SUB-STATION CALHOUN	17420	+35.278164	-84.753816	064	0112	Bowater Southern Paper Company
471070101	McMinn	INDUSTRIAL	81102	PM10	1	7	2012	6	CALHOUN BOWATERS NORTH(B-1) LAMOUNTVILLE	11940	+35.297330	-84.750760	064	0112	Bowater Southern Paper Company
471070101	McMinn	INDUSTRIAL	81102	PM10	2	7	2012	6	CALHOUN BOWATERS NORTH(B-1) LAMOUNTVILLE	11940	+35.297330	-84.750760	064	0112	Bowater Southern Paper Company
470110102	Bradley	INDUSTRIAL	42401	SO2	1	1	2012	Hourly	CHARLESTON BOWATERS SOUTH(B-2) WORTH ST.	17420	+35.283164	-84.759371	009	112	Bowater Southern Paper Company
470110102	Bradley	INDUSTRIAL	42602	NO2	1	1	2012	Hourly	CHARLESTON BOWATERS SOUTH(B-2) WORTH ST.	17420	+35.283164	-84.759371	035	112	Bowater Southern Paper Company
470111002	Bradley	SPECIAL PURPOSE	81102	PM10	1	7	2012	6	2850 Keith Street NW	17420	+35.188721	-84.867152	063	1025	Tennessee Division Of Air Pollution Control
470111002	Bradley	SPECIAL PURPOSE	81102	PM10	2	7	2012	6	2850 Keith Street NW	17420	+35.188721	-84.867152	063	1025	Tennessee Division Of Air Pollution Control
471070101	McMinn	SPECIAL PURPOSE	42401	SO2	1	1	2012	Hourly	CALHOUN BOWATERS NORTH(B-1) LAMOUNTVILLE	11940	+35.297330	-84.750760	009	1025	Bowater Southern Paper Company
471070101	McMinn	SPECIAL PURPOSE	42602	NO2	1	1	2012	Hourly	CALHOUN BOWATERS NORTH(B-1) LAMOUNTVILLE	11940	+35.297330	-84.750760	035	1025	Bowater Southern Paper Company
471071002	McMinn	SPECIAL PURPOSE	88101	PM2.5	1	7	2012	3	SAINT MARK AME ZION CHURCH, 707 NORTH JA	11940	+35.451111	-84.599167	118	1025	Tennessee Division Of Air Pollution Control
471071002	McMinn	SPECIAL PURPOSE	88501	PM2.5 Cont	3	1	2012	Hourly	SAINT MARK AME ZION CHURCH, 707 NORTH JA	11940	+35.451111	-84.599167	716	1025	Tennessee Division Of Air Pollution Control
471210104	Meigs	SPECIAL PURPOSE	44201	O3	1	1	2012	Hourly	8401 HIGHWAY 60		+35.288997	-84.946044	087	1025	Tennessee Division Of Air Pollution Control

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
470110103	Bradley	INDUSTRIAL	81102	PM10	SIERRA-ANDERSEN/GMW 321-B	GRAVIMETRIC	RFPS-1287-064	HIGHEST CONCENTRATION	POINT	NEIGHBORHOOD	COMMERCIAL	RURAL	7/1/1986
471070101	McMinn	INDUSTRIAL	81102	PM10	SIERRA-ANDERSEN/GMW 321-B	GRAVIMETRIC	RFPS-1287-064	HIGHEST CONCENTRATION	POINT	NEIGHBORHOOD	AGRICULTURAL	SUBURBAN	3/1/1982
471070101	McMinn	INDUSTRIAL	81102	PM10	SIERRA-ANDERSEN/GMW 321-B	GRAVIMETRIC	RFPS-1287-064	HIGHEST CONCENTRATION	POINT	NEIGHBORHOOD	AGRICULTURAL	SUBURBAN	3/1/1982
470110102	Bradley	INDUSTRIAL	42401	SO2	THERMO ELECTRON 43	PULSED FLUORESCENT	EQSA-0276-009	UNKNOWN	POINT	MIDDLE SCALE	RESIDENTIAL	URBAN AND CENTER CITY	3/1/1982
470110102	Bradley	INDUSTRIAL	42602	NO2	THERMO ELECTRON 14B/E	CHEMILUMINESCENCE	RFNA-0179-035	UNKNOWN	POINT	NULL	RESIDENTIAL	URBAN AND CENTER CITY	3/1/1982
470111002	Bradley	SPECIAL PURPOSE	81102	PM10	GMW Model 1200	GRAVIMETRIC	RFPS-1287-063	UNKNOWN	NULL	NULL	COMMERCIAL	SUBURBAN	1/1/1972
470111002	Bradley	SPECIAL PURPOSE	81102	PM10	GMW Model 1200	GRAVIMETRIC	RFPS-1287-063	UNKNOWN	NULL	NULL	COMMERCIAL	SUBURBAN	1/1/1972
471070101	McMinn	SPECIAL PURPOSE	42401	SO2	THERMO ELECTRON 43	PULSED FLUORESCENT	EQSA-0276-009	HIGHEST CONCENTRATION	POINT	NEIGHBORHOOD	AGRICULTURAL	SUBURBAN	3/1/1982
471070101	McMinn	SPECIAL PURPOSE	42602	NO2	THERMO ELECTRON 14B/E	CHEMILUMINESCENCE	RFNA-0179-035	POPULATION EXPOSURE	POINT	NULL	AGRICULTURAL	SUBURBAN	3/1/1982
471071002	McMinn	SPECIAL PURPOSE	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	COMMERCIAL	URBAN AND CENTER CITY	7/1/1986
471071002	McMinn	SPECIAL PURPOSE	88501	PM2.5 Cont		TEOM Gravimetric 50 deg C		POPULATION EXPOSURE	AREA	NEIGHBORHOOD	COMMERCIAL	URBAN AND CENTER CITY	7/1/1986
471210104	Meigs	SPECIAL PURPOSE	44201	O3	MODEL 400 OZONE ANALYZER	ULTRA VIOLET ABSORPTION	EQOA-0992-087	UNKNOWN	NULL	NULL	RESIDENTIAL	RURAL	2/29/2000

Monitoring Sites Located In Non-MSA/CBSA Areas In Tennessee



Site	AQSID	Parameter Combined
15	470450004	PM2.5, PM2.5 Cont
29	470990002	PM2.5, PM2.5 Cont, PM Spec
32	471070101	SO2, NO2, PM10, PM10 Coloc
33	471071002	PM2.5, PM2.5 Cont
36	471192007	PM2.5
37	471210104	O3
41	471410005	PM2.5
42	471450004	PM10, PM2.5, PM2.5 Cont
43	471450103	PM10, PM10 Coloc
44	471450104	PM10
45	471451001	Pb, Pb Coloc, Pb, PM10 Cont, PM10, PM10 Coloc, PM2.5, PM2.5 Cont, PM2.5 Coloc, PM2.5 Cont, PM Spec
46	471453005	PM2.5, PM2.5 Cont
47	471453006	PM2.5
48	471453008	PM2.5, PM2.5 Cont
49	471453009	PM10, PM10 Cont, PM2.5, PM2.5 Cont
50	471453013	PM2.5 Cont
52	471550101	SO2, O3
53	471550102	O3

A number of the monitoring sites identified in the Roane County area are being operated to monitor clean-up activities that are on-going in and around the Kingston TVA facility. The duration of monitoring and types of monitors may change over time and are not considered to be part of the regulatory monitoring network required to be operated for comparisons to the NAAQS.

Additional monitoring sites are operated in areas outside of the CBSA/MSA areas to help establish background air quality levels and to help define the air quality for those areas less densely populated outside of the metropolitan areas.

The TEOM POC 3 PM2.5 particulate monitors and the speciation POC 5 STN monitors are generally not suited to be used for comparisons to the annual PM2.5 standards.

There are no plans to relocate or shutdown any existing monitoring sites in the areas described.

AQSID	County Name	Monitor Type	Para	Para Name	POC	Int	Year	Collection Frequency	Address	CBSA	Lat	Lon	Mtd	RepOrg	RepOrgName
471450103	Roane	INDUSTRIAL	81102	PM10	1	7	2012	6	R.CARBON CLYMERSVILLE RD & BALDWIN	25340	+35.868153	-84.698258	063	0921	Horsehead Corp
471450103	Roane	INDUSTRIAL	81102	PM10	2	7	2012	6	R.CARBON CLYMERSVILLE RD & BALDWIN	25340	+35.868153	-84.698258	063	0921	Horsehead Corp
471450104	Roane	INDUSTRIAL	81102	PM10	1	7	2012	6	R.CARBON HEWITT AVE. HIGH SHCOOL	25340	+35.873152	-84.689646	063	0921	Horsehead Corp
471550101	Sevier	NON-EPA FEDERAL	42401	SO2	1	1	2012	Hourly	GREAT SMOKY MOUNTAIN NP COVE MOUNTAIN	42940	+35.696667	-83.609722	009	0745	National Park Service
471550101	Sevier	NON-EPA FEDERAL	44201	O3	1	1	2012	Hourly	GREAT SMOKY MOUNTAIN NP COVE MOUNTAIN	42940	+35.696667	-83.609722	047	0745	National Park Service
471550102	Sevier	NON-EPA FEDERAL	44201	O3	1	1	2012	Hourly	CLINGSMANS DOME, GREAT SMOKY MTNS. NP	42940	+35.562778	-83.498056	047	0745	National Park Service
470450004	Dyer	SLAMS	88101	PM2.5	1	7	2012	3	175-B GREENWOOD STREET	20540	+36.052871	-89.382270	118	1025	Tennessee Division Of Air Pollution Control
470450004	Dyer	SPECIAL PURPOSE	88501	PM2.5 Cont	3	1	2012	Hourly	175-B GREENWOOD STREET	20540	+36.052871	-89.382270	716	1025	Tennessee Division Of Air Pollution Control
470990002	Lawrence	SLAMS	88101	PM2.5	1	7	2012	3	BUSBY RD	29980	+35.116223	-87.470010	118	1025	Tennessee Division Of Air Pollution Control
470990002	Lawrence	SPECIAL PURPOSE	88501	PM2.5 Cont	3	1	2012	Hourly	BUSBY RD	29980	+35.116223	-87.470010	716	1025	Tennessee Division Of Air Pollution Control
470990002	Lawrence	SUPLMNTL SPECIATION	88502	PM Spec	5	7	2012	6	BUSBY RD	29980	+35.116223	-87.470010	810	1025	Tennessee Division Of Air Pollution Control
471192007	Maury	SPECIAL PURPOSE	88101	PM2.5	1	7	2012	3	1600 NASHVILLE HWY	17940	+35.651920	-87.026300	118	1025	Tennessee Division Of Air Pollution Control
471410005	Putnam	SPECIAL PURPOSE	88101	PM2.5	1	7	2012	3	630 EAST 20TH STREET	18260	+36.185720	-85.492200	118	1025	Tennessee Division Of Air Pollution Control
471450004	Roane	SPECIAL PURPOSE	88101	PM2.5	1	7	2012	3	HARRIMAN HIGH 1002 N. ROAN ST MOVED FRO	25340	+35.938695	-84.543720	118	1025	Tennessee Division Of Air Pollution Control
471450004	Roane	SPECIAL PURPOSE	88501	PM2.5 Cont	3	1	2012	Hourly	HARRIMAN HIGH 1002 N. ROAN ST MOVED FRO	25340	+35.938695	-84.543720	716	1025	Tennessee Division Of Air Pollution Control
471451001	Roane	SPECIAL PURPOSE	14128	Pb	1	7	2012	6	199 Lake Shore Rd, Kingston TN 37763	25340	+35.916795	-84.503518	089	1025	Tennessee Division Of Air Pollution Control

AQSID	County Name	Monitor Type	Para	Para Name	POC	Int	Year	Collection Frequency	Address	CBSA	Lat	Lon	Mtd	RepOrg	RepOrgName
471451001	Roane	SPECIAL PURPOSE	81102	PM10 Cont	1	1	2012	Hourly	199 Lake Shore Rd, Kingston TN 37763	25340	+35.916795	-84.503518	079	1025	Tennessee Division Of Air Pollution Control
471451001	Roane	NON-REGULATORY	88101	PM2.5 Cont	3	1	2012	Hourly	199 Lake Shore Rd, Kingston TN 37763	25340	+35.916795	-84.503518	170	1029	Tennessee Valley Authority
471453005	Roane	NON-REGULATORY	88101	PM2.5 Cont	3	1	2012	Hourly	1025 Swan Pond Road, Harriman, TN 37748	25340	+35.902566	-84.524061	170	1029	Tennessee Valley Authority
471453008	Roane	NON-REGULATORY	88101	PM2.5 Cont	3	1	2012	Hourly	540 Emory River Road, Harriman, TN 37748	25340	+35.907121	-84.497090	170	1029	Tennessee Valley Authority
471453009	Roane	NON-REGULATORY	88101	PM2.5 Cont	3	1	2012	Hourly	304 Windswept Lane, Kingston, TN 37763	25340	+35.889824	-84.517130	170	1029	Tennessee Valley Authority
471453013	Roane	NON-REGULATORY	88101	PM2.5 Cont	3	1	2012	Hourly	SWAN POND CIRCLE ROAD; HARRIMAN, TN 3774	25340	+35.925500	-84.516570	170	1029	Tennessee Valley Authority

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
471450103	Roane	INDUSTRIAL	81102	PM10	GMW Model 1200	GRAVIMETRIC	RFPS-1287-063	HIGHEST CONCENTRATION	POINT	NEIGHBORHOOD	INDUSTRIAL	SUBURBAN	1/1/1986
471450103	Roane	INDUSTRIAL	81102	PM10	GMW Model 1200	GRAVIMETRIC	RFPS-1287-063	UNKNOWN	POINT	NULL	INDUSTRIAL	SUBURBAN	1/1/1986
471450104	Roane	INDUSTRIAL	81102	PM10	GMW Model 1200	GRAVIMETRIC	RFPS-1287-063	HIGHEST CONCENTRATION	POINT	NEIGHBORHOOD	INDUSTRIAL	SUBURBAN	1/1/1986
471550101	Sevier	NON-EPA FEDERAL	42401	SO2	THERMO ELECTRON 43	PULSED FLUORESCENT	EQSA-0276-009	GENERAL/BACKGROUND	AREA	NEIGHBORHOOD	FOREST	RURAL	7/1/1988
471550101	Sevier	NON-EPA FEDERAL	44201	O3	THERMO ELECTRON 49	ULTRA VIOLET	EQOA-0880-047	UNKNOWN	AREA	NEIGHBORHOOD	FOREST	RURAL	7/1/1988
471550102	Sevier	NON-EPA FEDERAL	44201	O3	THERMO ELECTRON 49	ULTRA VIOLET	EQOA-0880-047	HIGHEST CONCENTRATION	NULL	REGIONAL SCALE	FOREST	RURAL	4/1/1993
470450004	Dyer	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	8/22/1999
470450004	Dyer	SPECIAL PURPOSE	88501	PM2.5 Cont		TEOM Gravimetric 50 deg C		POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	8/22/1999
470990002	Lawrence	SLAMS	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	UPWIND BACKGROUND	NULL	NULL	AGRICULTURAL	RURAL	4/1/1997
470990002	Lawrence	SPECIAL PURPOSE	88501	PM2.5 Cont		TEOM Gravimetric 50 deg C		MAX OZONE CONCENTRATION	NULL	NULL	AGRICULTURAL	RURAL	4/1/1997
470990002	Lawrence	SUPLMNTL SPECIATION	88502	PM Spec		Gravimetric		UPWIND BACKGROUND	AREA	URBAN SCALE	AGRICULTURAL	RURAL	4/1/1997
471192007	Maury	SPECIAL PURPOSE	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	AREA	MIDDLE SCALE	COMMERCIAL	URBAN AND CENTER CITY	12/25/1998
471410005	Putnam	SPECIAL PURPOSE	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	AREA	NEIGHBORHOOD	RESIDENTIAL	SUBURBAN	8/15/2006
471450004	Roane	SPECIAL PURPOSE	88101	PM2.5	R & P CO PLUS MODEL 2025PM SEQ	GRAVIMETRIC	RFPS-0498-118	POPULATION EXPOSURE	NULL	URBAN SCALE	INDUSTRIAL	SUBURBAN	1/1/1980
471450004	Roane	SPECIA	88501	PM2.5		TEOM Gravimetric		POPULATION	AREA	URBAN	INDUST	SUBURBA	1/1/1980

AQSID	County Name	Monitor Type	Para	Para Name	Monitoring Instrument	Analysis	Ref Mtd ID	Monitor Objective Type	Dominant Source	Measurement Scale	Land Use Type	Location Setting	Date Site Established
		L PURPO SE		Cont		50 deg C		EXPOSURE		SCALE	RIAL	N	
471451001	Roane	SPECIA L PURPO SE	14128	Pb		ICP/MS W/QUARTZ FILTER		SOURCE ORIENTED	POINT	MICROSCAL E	AGRICU LTURAL	RURAL	1/1/1958
471451001	Roane	SPECIA L PURPO SE	81102	PM10 Cont	RUPRCHT&P ATSHNCK TEOM SER 1400	TEOM-GRAVIMETRIC	EQPM-1090-079	SOURCE ORIENTED	POINT	MICROSCAL E	AGRICU LTURAL	RURAL	1/1/1958
471451001	Roane	NON-REGUL ATORY	88101	PM2.5 Cont	Met One BAM-1020 PM2.5 VSCC FEM	Beta Attenuation	EQPM-0308-170	POPULATION EXPOSURE	AREA	NEIGHBORH OOD	AGRICU LTURAL	RURAL	1/1/1958
471453005	Roane	NON-REGUL ATORY	88101	PM2.5 Cont	Met One BAM-1020 PM2.5 VSCC FEM	Beta Attenuation	EQPM-0308-170	POPULATION EXPOSURE	AREA	NEIGHBORH OOD	RESIDEN TIAL	RURAL	1/1/2009
471453008	Roane	NON-REGUL ATORY	88101	PM2.5 Cont	Met One BAM-1020 PM2.5 VSCC FEM	Beta Attenuation	EQPM-0308-170	POPULATION EXPOSURE	AREA	NEIGHBORH OOD	RESIDEN TIAL	RURAL	1/1/2009
471453009	Roane	NON-REGUL ATORY	88101	PM2.5 Cont	Met One BAM-1020 PM2.5 VSCC FEM	Beta Attenuation	EQPM-0308-170	POPULATION EXPOSURE	AREA	NEIGHBORH OOD	RESIDEN TIAL	RURAL	1/1/2009
471453013	Roane	NON-REGUL ATORY	88101	PM2.5 Cont	Met One BAM-1020 PM2.5 VSCC FEM	Beta Attenuation	EQPM-0308-170	POPULATION EXPOSURE	AREA	NEIGHBORH OOD	RESIDEN TIAL	RURAL	4/26/2010

Agreement Letters with Agencies Outside of Tennessee

Appendix 1: MSA Monitoring Agreements Prepared by Kentucky and Tennessee for Ozone and Continuous PM2.5 Monitoring

Appendix 1: MSA Monitoring Agreements Prepared by Kentucky and Tennessee for Ozone and Continuous PM2.5 Monitoring

Tennessee Agreement Letter (page 1 of 2 pages)

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

DIVISION OF AIR POLLUTION CONTROL
9TH FLOOR, L & C ANNEX
401 CHURCH STREET
NASHVILLE, TN 37243-1531

October 25, 2007

John S. Lyons, Director
Kentucky Division for Air Quality
Kentucky Department for Environmental Protection
803 Schenkel Lane
Frankfort, KY 40601

Dear Mr. Lyons:

The United States Environmental Protection Agency (EPA) revised monitoring regulations promulgated in Federal Register / Vol. 71, No. 200 / Tuesday, October 17, 2006 / Rules and Regulations, 40 CFR Part 58, Appendix D states in part: "The EPA recognizes that there may be situations where the EPA Regional Administrator and the affected State or local agencies may need to augment or to divide the overall MSA/CSA monitoring responsibilities and requirements among these various agencies to achieve an effective network design. Full monitoring requirements apply separately to each affected State or local agency in the absence of an agreement between the affected agencies and the EPA Regional Administrator." This revision of the CFR also describes the minimum monitoring requirements for the NAAQS pollutants, including continuous PM 2.5 as it applies to MSA areas where the population is sufficient to warrant monitoring for that pollutant. Tennessee and Kentucky share the Clarksville, TN-KY MSA, which is comprised of Trigg and Christian counties in Kentucky and Stewart and Montgomery counties in Tennessee. The US Census Bureau lists this area as containing a population in excess of 230,000:

CBSA Code	Geographic area	Legal/statistical area description	July 1, 2005 Estimate	2000 Census
17300	Clarksville, TN-KY	Metropolitan Statistical Area	243,665	232,000

The Tennessee Division of Air Pollution Control (TDAPC) currently operates one (1) PM 2.5 FRM monitor and one (1) speciation monitor in Montgomery county and is installing a new continuous PM 2.5 monitor in this area. The TDAPC believes the operation of the existing PM 2.5 monitors; (FRM, speciation and new continuous), are sufficient to properly characterize the particulate air quality in the entire Clarksville, TN-KY MSA and comply with the requirements for both population and concentration based monitoring identified in the revised monitoring regulations as found at FR Vol. 71, No. 200 / Tuesday, October 17, 2006 p. 61321, "Table D-5" and FR Vol. 71, No. 200 / Tuesday, October 17, 2006 p. 61322, "4.7.2 Requirement for Continuous PM2.5 Monitoring". The TDAPC would like to invite the Kentucky Division for Air Quality to participate in Tennessee's annual ambient air monitoring network review. Tennessee commits to sharing with Kentucky any and all quality assured ambient air

monitoring data collected in the Tennessee portion of the Clarksville, TN-KY MSA. Tennessee also will notify Kentucky in advance of the intent to relocate or shutdown any of the PM 2.5 monitors referenced above so that adequate monitoring arrangements can be made to meet the entire MSA monitoring requirements for PM 2.5.

Sincerely,

Barry R. Stephens, PE
Director, Air Pollution Control Division

BRS/erb
cc: Beverly Banister, US EPA Region IV

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Ernie Fletcher
Governor

Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601-1403

Teresa J. Hill
Secretary

November 27, 2007

Barry R. Stephens, PE
Director
Division of Air Pollution Control
9th Floor, L & C Annex
401 Church Street
Nashville, Tennessee 37243-1531

Dear Mr. Stephens: Barry

In a letter from your office dated October 25, 2007, the Tennessee Division of Air Pollution Control (TDAPC) agrees to operate a continuous PM2.5 monitor in the Clarksville/Hopkinsville metropolitan statistical area (MSA) to meet U.S. EPA's monitoring requirements. The Kentucky Division for Air Quality (DAQ) appreciates TDAPC's commitment to operate the PM2.5 monitor to meet all of the regulatory requirements for the MSA. DAQ also looks forward to participating in TDAPC's annual ambient air monitoring network review.

In accordance with Table D-2 of Appendix D to 40 CFR Part 58, one (1) ozone monitor is required to be operated in the Clarksville/Hopkinsville MSA. To satisfy the regulatory requirement, the DAQ agrees to operate an ozone monitor at the Hopkinsville monitoring station. DAQ commits to sharing with TDAPC any and all quality assured ambient air monitoring data collected in the Kentucky portion of the Clarksville/Hopkinsville MSA.

In the event that a shutdown or relocation of the ozone monitor is necessary, DAQ will notify TDAPC prior to the shutdown or relocation. Also, DAQ will operate the ozone monitor in accordance with all ambient air monitoring requirements located in 40 CFR Parts 50, 53, and 58.

If you have questions or concerns, please contact me at (502) 573-3382.

Sincerely,

John S. Lyons
Director

JSL/SOA/bss
c: Doug Neeley, US EPA Region 4

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